Commonwealth of Massachusetts
Department of Telecommunications and Energy

Bell Atlantic
OSS Evaluation Project

Final Report

DRAFT
VERSION 1.3

Submitted by:

KPMG Consulting

August 9, 2000

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VI. Relationship Management and Infrastructure Domain Results and Analysis Section

I. DOCUMENT CONTROL

A. Distribution

Table I-1: Distribution List For Document

Person	Department	Date Sent
Paul Vasington	Commonwealth of Massachusetts Department of Telecommunications and Energy	
Michael Isenberg	Commonwealth of Massachusetts Department of Telecommunications and Energy	
Cathy Carpino	Commonwealth of Massachusetts Department of Telecommunications and Energy	
Scott Simon	Commonwealth of Massachusetts Department of Telecommunications and Energy	
April Mulqueen	Commonwealth of Massachusetts Department of Telecommunications and Energy	
Paul Afonso	Commonwealth of Massachusetts Department of Telecommunications and Energy	
Jack Conroy	Bell Atlantic-Massachusetts	
Robert Kenney	Bell Atlantic-Massachusetts	
Jennifer Stocker	Bell Atlantic-Massachusetts	
Raymond Sears III	KPMG Consulting	
Bradley Schwartz	KPMG Consulting	
Michael Weeks	KPMG Consulting	
Michael Adderly	KPMG Consulting	
Diana Campbell	KPMG Consulting	
Joseph DellaTorre	KPMG Consulting	
John Eringis	KPMG Consulting	
Charles King	KPMG Consulting	
Robert Mayer	KPMG Consulting	
Richard Swanson	KPMG Consulting	

B. Approved By

Table I-2: Approval List For Document

Person	Department	Date
Scott Simon	Commonwealth of Massachusetts Department of Telecommunications and Energy	July 17, 2000

Table I-3: Version Control

Version	Date	Reason
1.0	July 17, 2000	Initial draft release
1.1	July 26, 2000	Revised draft release
1.2	August 2, 2000	Revised draft release
1.3	August 9, 2000	Revised draft release

C. Statement of Limiting Conditions

The following conditions, limitations, and assumptions relate to the final report:

This report is provided pursuant to the terms and conditions of the consulting services contract dated August 25, 1999 among KPMG Consulting, Bell Atlantic-Massachusetts, and the Commonwealth of Massachusetts Department of Telecommunications and Energy.

The results contained within this report are made up of a significant number of tests and evaluation criteria and are presented without weighting considerations, such as, none of the individual test results can be considered independently. To draw conclusions based on individual test measures, or a limited number of test measures, would be inappropriate.

This report assumes that the reader possesses a general understanding of the telecommunications industry and related systems, documentation, and processes; consequently, KPMG Consulting assumes no responsibility for the misuse, misunderstanding, or misinterpretation of the content of this report.

The report has been prepared solely for the purpose stated and should not be used for any other purpose. Except as specifically stated in the report, neither our report nor its contents is to be referred to or quoted, in whole or in part, in any registration statement, prospectus, public filing, loan agreement, or other agreement or document, without our prior written approval.

Certain information and assumptions (oral and written) have been provided to us by the management of Bell Atlantic and other third parties. We have relied on this information in our analysis and in the preparation of the report, and have not independently verified the accuracy or completeness of the information provided; accordingly, we express no opinion on such data.

We have not conducted an audit or review of the historical data provided to us in accordance with generally accepted auditing procedures and/or standards promulgated by the American Institute of Certified Public Accountants (AICPA).

We express no opinion or offer any assurance with respect to the accuracy of the aforementioned historical data.

KPMG Consulting makes no representation nor has any obligation with reference to any events or transactions occurring subsequent to the date of this report.

II. EXECUTIVE SUMMARY

A. Introduction

1.0 Background

The Massachusetts Department of Telecommunications and Energy (DTE) is considering the matter of Bell Atlantic-Massachusetts's (BA-MA) compliance with the requirements of Section 271 of the Telecommunications Act of 1996 (the Act) in the context of DTE Docket 99-271. The Act, together with Federal Communications Commission (FCC) interpretations, require BA-MA to:

- Provide non-discriminatory access to its Operations Support Systems (OSS) on appropriate terms and conditions;
- Provide the documentation and support necessary for Competitive Local Exchange Carriers (CLEC) to access and use these systems; and
- Demonstrate that BA-MA's systems are operationally ready and provide an appropriate level of performance.

Compliance with these requirements should allow competitors to obtain pre-ordering information, execute service orders for resold services and unbundled network elements (UNE), manage trouble, and obtain billing information at a level deemed to be non-discriminatory when compared with BA-MA's retail operations.

The DTE retained KPMG Consulting to conduct an independent, third-party test of the readiness of BA-MA's OSSs, interfaces, documentation, and processes to support local market entry by the CLECs.

2.0 Objective

The objectives of this Executive Summary are to provide:

- A high-level description of the process KPMG Consulting followed in evaluating BA-MA's policies, procedures, documentation, interfaces and systems; and
- A summary of the results of our testing activities.

3.0 Audience

We anticipate that the audience for this document will fall into two main categories:

- Readers who will utilize this document during an evaluation process (i.e., the DTE; the FCC; and Department of Justice); and
- Other interested parties who have some stake in the result of BA-MA's OSS evaluation and wish to have insight into the test results (e.g., BA-MA, CLECs, other ILECs)

While many of the above parties have stated an interest in the test and its results, only the DTE and BA-MA are actual parties to the contract with KPMG Consulting. Third-party reliance on this report is not intended and is explicitly prohibited. It is expected that the DTE will review this report in forming its own assessment of BA-MA's compliance with the requirements of the Act.

4.0 Scope

The scope of the test is documented in the Master Test Plan (MTP) dated November 24, 1999. KPMG Consulting developed the initial draft of the MTP using its understanding of BA-MA's products and industry trends, as well as the experience gained during the Bell Atlantic-New York 271 OSS Evaluation. Significant input from the DTE, BA-MA, and various CLECs was solicited, received and considered during the development period. Actual BA-MA and CLEC business plans and projections were also reviewed during construction of the MTP.

In determining the breadth of the test, all stages of the CLEC-ILEC relationship were considered. These include the following:

- Establishing the relationship;
- Performing daily operations; and
- Maintaining the relationship.

Furthermore, most of the current service delivery methods – resale, unbundled network elements (UNE), unbundled network elements-platform (UNE-P), and combinations were included in the scope of the test. (See Limitations below)

BA-MA offers CLECs access to its OSSs through an application-to-application electronic data interchange (EDI); a terminal-type, web-based graphical user interface (GUI); and, a common object request broker architecture (CORBA). KPMG Consulting tested the EDI and GUI interface types for both pre-order and order. At the DTE's request, KPMG Consulting emphasized EDI interface testing because it is highly likely that the EDI interface will be the one most heavily used by a competitive marketplace. CORBA was not subject to KPMG Consulting's assessment.

Non-transaction tests included evaluations of policies, procedures, guidelines, training, documentation and work center activities associated with the CLEC/ILEC relationship management process.

Finally, the test included procedures designed to evaluate BA-MA's ability to scale to handle increased CLEC business volumes at estimated October 2000 levels.

5.0 Approach

The test approach is described below.

5.1 Domains

To organize and facilitate testing, the MTP was divided into five domains that roughly correspond to a customer's life cycle:

- Pre-Ordering, Ordering, and Provisioning (POP)
- Maintenance and Repair (M&R)
- Billing (BLG)
- Relationship Management and Infrastructure (RMI)
- Performance Metrics Reporting (PMR)

Within each domain, evaluation criteria were applied to evaluate BA-MA's performance for specific test targets.

5.2 Test Types

In formulating our approach to testing, KPMG Consulting solicited input from both the DTE and the CLECs. It was important to understand the types of activities that had either previously presented problems, or were currently the greatest concern. KPMG Consulting combined this input with our own experience and identified two fundamental types of tests: transaction-driven and operational.

5.2.1 Transaction-driven Tests

One of the goals of transaction-driven testing was to live the CLEC experience. The fundamental idea was to establish a pseudo-CLEC, and to build and submit both pre-order and order transactions using BA-MA's electronic interfaces – much like a real CLEC would do. Transaction-driven system testing was utilized extensively in the POP, M&R and BLG domains.

KPMG Consulting and Hewlett Packard (HP) combined efforts to accomplish the transaction-driven tests. KPMG Consulting's role was that of a CLEC operations group – including understanding business rules, creating and tracking orders, monitoring BA-MA performance, logging trouble tickets, and evaluating carrier-to-carrier bills. HP's role was that of a CLEC Information Technology group – establishing electronic bonding with BA-MA, translating back and forth between business and EDI rule formats, and resolving problems with missing orders and responses.

Most of the POP and many of the BLG transaction-driven tests utilized the EDI interface that was built by HP using publicly available BA-MA specifications. However, the GUI was also used to submit selected POP and BLG orders. All of the M&R trouble tickets were submitted using the Repair Trouble Administration System (RETAS) GUI.

Live CLEC test cases provided an alternative test method for transactions that were not practical in our test environment (see Limitations below). Moreover, live CLEC test cases facilitated a different perspective on actual production. Live CLEC production was also monitored during the test period to assess the performance and service levels experienced by CLECs during the test.

Over 138 different scenarios were used to structure transaction testing of BA-MA's OSS and related support services. An example of a scenario might be "migration as-is of a single line residence customer from BA-MA to the pseudo CLEC." Some scenarios were specific to a particular domain, while others spanned multiple domains providing an end-to-end test of BA-MA's systems and processes. Variations of each scenario were executed to test a range of feature/function combinations, and to reach desired transaction volume levels.

5.2.2 Operational Tests

Operational tests focused on the form, structure, and content of the business process under evaluation. This test method was used to evaluate BA-MA's day-to-day operations and operational management practices, including policy development, procedural development, and procedural change management.

Operational analysis methods were used to evaluate the results of a process to determine if the process appeared to function correctly, in accordance with documentation and expectations. KPMG Consulting also reviewed management practices and operating procedures, comparing the results against legal, statutory, and other written requirements.

5.3 Military-style Test Philosophy

This test, like that conducted in New York, was conducted with a military-style test philosophy. The idea was to report problems discovered during the test so that there was an opportunity for BA-MA to correct those problems and, where feasible, for KPMG Consulting to conduct a retest or follow on assessment. The test process worked as follows:

- If a problem was encountered during the conduct of a test described in this document, KPMG Consulting informed the MA DTE and BA-MA.
- BA-MA submitted formal responses to the problems identified by KPMG Consulting. These responses either clarified the issue or described BA-MA's intended fix (s) to the problem.
- Once BA-MA's intended fix was completed KPMG Consulting re-tested as required; if the fix did not resolve the issue the repair and retest cycle was repeated within the planned project schedule.
- KPMG Consulting then documented and reported on the re-test activities associated with the identified problems.
- KPMG Consulting, in consultation with the DTE, determined that certain issues were not to be the subject of re-testing, as in the case of a fix that required a long lead time.

5.4 Blindness

As previously stated, one of the objectives of the test was to live the CLEC experience. Yet it was virtually impossible for the KPMG Consulting/HP test to be truly blind to BA-MA. For example, transactions arrive on dedicated telephone circuits, the owners of which are known by BA-MA. Each CLEC has a unique set of IDs assigned by BA-MA that must be included in every transaction.

To partially offset this, we instituted certain procedures to help ensure that KPMG Consulting and HP would not receive treatment from BA-MA that was obviously different from that received by a real CLEC. For example, we required that all documents given to us be generally available to all CLECs. The DTE monitored telephone calls and face-to-face meetings between KPMG Consulting/HP and BA-MA. CLECs were invited to attend conference calls. We reported problems using the same help desk mechanisms used by the CLECs. In addition, we made concurrent observations of the service quality delivered to other CLECs during the course of our test, and compared that with the quality of the service we received.

5.5 Evaluation Criteria

Measures and their corresponding evaluation criteria provided the basis for conducting tests. Evaluation criteria were the norms, benchmarks, standards, and guidelines used to evaluate measures identified for testing. Evaluation criteria provided a framework for identification of the scope of tests, the types of measures that must be made during testing, and the approach necessary to analyze results.

In many cases, the test results were compared against measures and criteria identified by the DTE such as the New York Carrier-to-Carrier Performance Guidelines, as referenced in the Letter Order dated January 14, 2000. In other cases, results were evaluated using explicit evaluation criteria established by KPMG Consulting using its professional judgment. Each evaluation criterion was analyzed individually and has its own associated result and comment. The results fell into the following categories:

- Satisfied — the evaluation criterion was satisfied;
- Not Satisfied — the evaluation criterion was not satisfied. Some issues were identified that would have a business impact to CLECs. Observations and exceptions may have been raised regarding said issues. For all exceptions and observations, please access the MA-DTE web site at: http://www.magnet.state.ma.us/dpu/

KPMG Consulting must point out that the criteria are not all of equal importance. Some are less important as stand-alone measures, but are important when taken in a group. Other criteria are significant in their own right. A simple numerical counting or averaging of results by result category is misleading and should be avoided.

5.6 Test Bed

In order to accomplish the transaction testing, BA-MA provisioned a test bed of initial accounts that would represent a market share of BA-MA or other CLEC accounts that would be lost to our pseudo-CLEC. The notion of a test bed is a logical concept in that the test accounts were created in BA-MA's production systems, in actual central offices (COs) spread across the state, not in a separate test system. KPMG Consulting, the DTE, and BA-MA cooperated to define the test bed.

5.7 Inclusion of BA-NY OSS Evaluation

As stated in the MTP, BA-MA and BA-NY share systems, interfaces, documentation, personnel, policies and procedures. Accordingly, the BA-MA OSS evaluation was designed as a validation of those shared components as well as a full examination of those elements unique to BA-MA. At the commencement of testing, KPMG Consulting conducted an evaluation of the test objects identified by the MTP for similarity with test objects evaluated in NY. KPMG Consulting ensured the objects were similar by validating the results of the NY test through documentation reviews, structured interviews with Bell Atlantic and CLEC personnel and inspections of physical systems and working environments. Where appropriate, KPMG Consulting re-tested shortcomings discovered in NY's test, product differences identified for Massachusetts and test objects that underwent material changes subsequent to the conclusion of the NY test.

6.0 Limitations

The test, representative of an entire CLEC marketplace, was much broader than that likely to be experienced by any single CLEC in the near future. However, the test was not intended to be exhaustive because it is neither feasible nor desirable to test all possible permutations and combinations of all features and functions across all offered products.

In some cases it was not practical to simulate certain order types, troubles, and processes in a test situation. Examples include orders with very long interval periods; provisioning of large volumes of test transactions that would exceed the manual capacity of BA-MA's work centers; or, the complex, time consuming Network Design Review (NDR) process. In these cases we attempted alternative test procedures such as conducting interviews with BA-MA and CLEC personnel; inspection of live orders in process; review of historical performance or operational reports; or another method that captured the performance of BA-MA with respect to the order types and processes in question.

It was not practical or desirable to execute certain live tests that would disrupt service to BA-MA or CLEC customers. BA-MA performance for these test cases was evaluated by other means. The test reports in each domain section identify the tests that were executed using KPMG Consulting transactions and those that were executed by other means.

B. High-level Test Results

As a result of performing our tests we make the following high-level observations:

1.0 General

The following general observations span several domains and have been collected here for brevity.

1.1 Service Quality

KPMG Consulting believes that the quality of the service received during the test was comparable to that generally received by CLECs. On several occasions, BA-MA resources assigned to handle KPMG Consulting problem escalations were senior BA-MA resources. KPMG Consulting has verified that senior level Bell Atlantic personnel will often involve themselves in problem solving for other members of the CLEC community through a review of internal BA-MA memorandums and meeting notes.

1.2 New Entrant Certification

BA-MA has developed a separate systems environment for the dual purpose of new entrant certification and pre-production, new release testing called the CLEC Test Environment (CTE). The CTE contains the following applications for pre-ordering and ordering:

- Interfaces: EDI, CORBA
- Connectivity: FTP, VAN, Interactive Agent/SSL3
- Gateway Systems: DCAS, DOE Level 5
- Interfaces to, or copies of, other systems needed to support these functions: SOP, CRIS, Atlas, Phoenix, CABS, PREMIS and Livewire

As part of KPMG Consulting's new release testing, quality assurance (QA) and systems readiness test (SRT) processes, the BA-MA CTE was evaluated for functionality and compliance with published documentation and procedures. CTE testing consisted of three different business rule releases for LSOG 2 pre-order and order and two different business rule releases for LSOG 4 pre-order and order. Each new release required that KPMG Consulting update its test scripts and orders to reflect the new business rules and interfaces.

While assimilation of these changes lengthened the overall test schedule, KPMG Consulting did observe that the documentation and software quality of subsequent releases were noticeably higher than that of the initial release. Several Exceptions were raised by KPMG Consulting that touched on the initial-state quality of the first LSOG 4 release. KPMG Consulting performed re-testing of a subsequent release of LSOG 4 and found the quality of the BA-MA transaction test deck and related documentation to be substantially improved. The comments in the relevant sections of our report should allow the DTE to assess the net impact of the new release and new entrant certification problems on the ability of the CLECs to operate in a competitive environment in Massachusetts.

2.0 Pre-Ordering, Ordering, and Provisioning (POP)

The Pre-ordering, Ordering, and Provisioning (POP) evaluation was developed to test the systems, processes, and other operational elements associated with BA-MA's support for POP activities for Wholesale operations. The test examined functionality, compliance with

measurement agreements, and comparable systems supporting BA-MA Retail operations. POP consisted of 8 different tests, of which 3 were transaction-oriented. KPMG Consulting evaluated 204 different test points, and generated 58 different Exceptions or Observations that can be summarized as follows:

- Deficiencies in EDI and Business Rule Documentation;
- Deficiencies in expected transaction responses; and
- Deficiencies in order processing during SOP downtime.

3.0 Maintenance and Repair (M&R)

The primary objective of the M&R test was to determine whether or not adequate procedures, documentation and systems exist to allow a CLEC to identify, report, manage, and resolve troubles encountered with BA-MA supplied network elements. M&R consisted of 9 different tests, of which 3 were transaction-oriented. KPMG Consulting evaluated 220 different test points, and generated 2 different Exceptions or Observations that can be summarized as follows:

- Deficiencies in RETAS documentation.

4.0 Billing (BLG)

The Billing domain included tests of both billing procedures and actual bills generated by the Carrier Access Billing (CABS) and Customer Records Information (CRIS) Systems.

Billing consisted of 7 different tests, of which 2 were transaction-oriented. KPMG Consulting evaluated 170 different test points, and generated 49 different Exceptions or Observations that can be summarized as follows:

- Deficiencies in bill validation;
- Deficiencies in usage records; and
- Deficiencies in bill delivery timeliness.

5.0 Relationship Management and Infrastructure (RMI)

The RMI domain evaluated BA-MA's processes that support establishing and maintaining relationships between BA-MA and CLECs including:

- Change management;
- Interface development;
- Account establishment and management;
- Network design, collocation, and interconnection planning;
- Help desks;
- CLEC training; and
- Forecasting.

RMI consisted of 10 different tests. KPMG Consulting evaluated 114 different test points, and generated 10 different Exceptions or Observations that can be summarized as follows:

- Deficiencies in documentation of change control policies; and
- Deficiencies in quality assurance procedures.

6.0 Performance Metrics Reporting (PMR)

The PMR domain evaluated the processes and systems used to capture BA-MA retail and wholesale metrics for all domains, including Pre-Ordering, Ordering, Provisioning, Maintenance and Repair, and Billing.

PMR relied on operational and statistical analyses to facilitate a structured review of BA-MA's information processing, metric calculation and reporting procedures. KPMG Consulting evaluated 96 different test points, and generated 5 different Exceptions or Observations that can be summarized as follows:

- Deficiencies in metrics change control processes.

C. Document Structure

This section describes the structure of the document. It includes a table that lists each major section number along with a brief description.

Table II-1: Document Overview

Sect. No.	Section	Content
I	Document Control	Identifies document distribution and necessary approvals.
II	Executive Summary	Describes the test and provides an overview of the results.
III	Pre-Ordering, Ordering, and Provisioning Domain Test Section	Describes the pre-ordering, ordering, and provisioning domain. Provides the detailed test reports related to POP.
IV	Maintenance and Repair Domain Test Section	Describes the maintenance and repair domain. Provides the detailed test reports related to M&R.
V	Billing Domain Test Section	Describes the billing domain. Provides the detailed test reports related to billing.
VI	Relationship Management and Infrastructure Domain Test Section	Describes the relationship management and infrastructure test domain. Provides the detailed test reports related to RM&I.
VII	Performance Metrics Reporting Domain Test Section	Describes the process performance test domain. Provides the detailed test reports related to Metrics.
Appendix A	Glossary	Testing terms and definitions used in this document.

A. Test Results: EDI Functional Evaluation and Volume Performance Test (POP1)

1.0 Description

The Electronic Data Interchange (EDI) Functional Evaluation and Volume Performance Test (POP1) evaluated the relevant systems, processes, and other operational elements associated with the Bell Atlantic-Massachusetts (BA-MA) pre-order and order processes. The objective of this test was to validate the existence, functionality, and performance of the interface and processes required by BA-MA for pre-ordering and ordering transaction submissions and responses. POP1 consisted of two components: 1) Functional Evaluation, and 2) Volume Performance Test.

1.1 Functional Evaluation

The Functional Evaluation assessed BA-MA's process for handling pre-orders and orders submitted via the EDI interface. During this test, KPMG Consulting submitted a mix of stand-alone pre-orders and orders, and integrated pre-order and order transaction sets (pre-order response information was used to populate subsequent service requests). Pre-orders and orders with planned errors, expedites, and supplemental service orders such as cancel requests, feature changes, and due date changes were also tested. KPMG Consulting continues to test functionality associated with EEL Upgrades, Caption Listing, and Resale Private Line orders in LSOG 2,[1] and Resale Centrex line additions in LSOG 4.

1.2 Volume Performance Test

The Volume Performance Test reviewed BA-MA's system capabilities, response intervals, and other compliance measures for pre-order and order transactions sent via EDI. The test used projected transaction volumes for the October 2000 timeframe, simulating normal, peak and stress volume conditions.

Volume Performance Test orders were sent in "training mode" whereby order processing stops after service order generation and does not go through provisioning. Order transactions were limited to those that "flow-through" BA-MA's order processing systems without human intervention. Additionally, functional transactions were submitted concurrent with the volume test.

2.0 Methodology

This section describes the test approach and methodology used to execute the Functional Evaluation and Volume Performance Test.

[1] Retests have been confirmed (LSC) by BA-MA and KPMG Consulting is waiting the standard interval for completion notices (PCN and BCN).

2.1 Business Process Description

Two transaction processes were central to the functional evaluation: the first was the pre-order process and the second was the ordering process. As part of the pre-ordering process, CLECs submit queries to validate existing customer information, to inquire on facility and technician availability and to obtain data (e.g., telephone numbers, service feature codes) that may be input on subsequent service orders. In response to a pre-order inquiry, BA-MA returns a valid pre-order response or an error message.

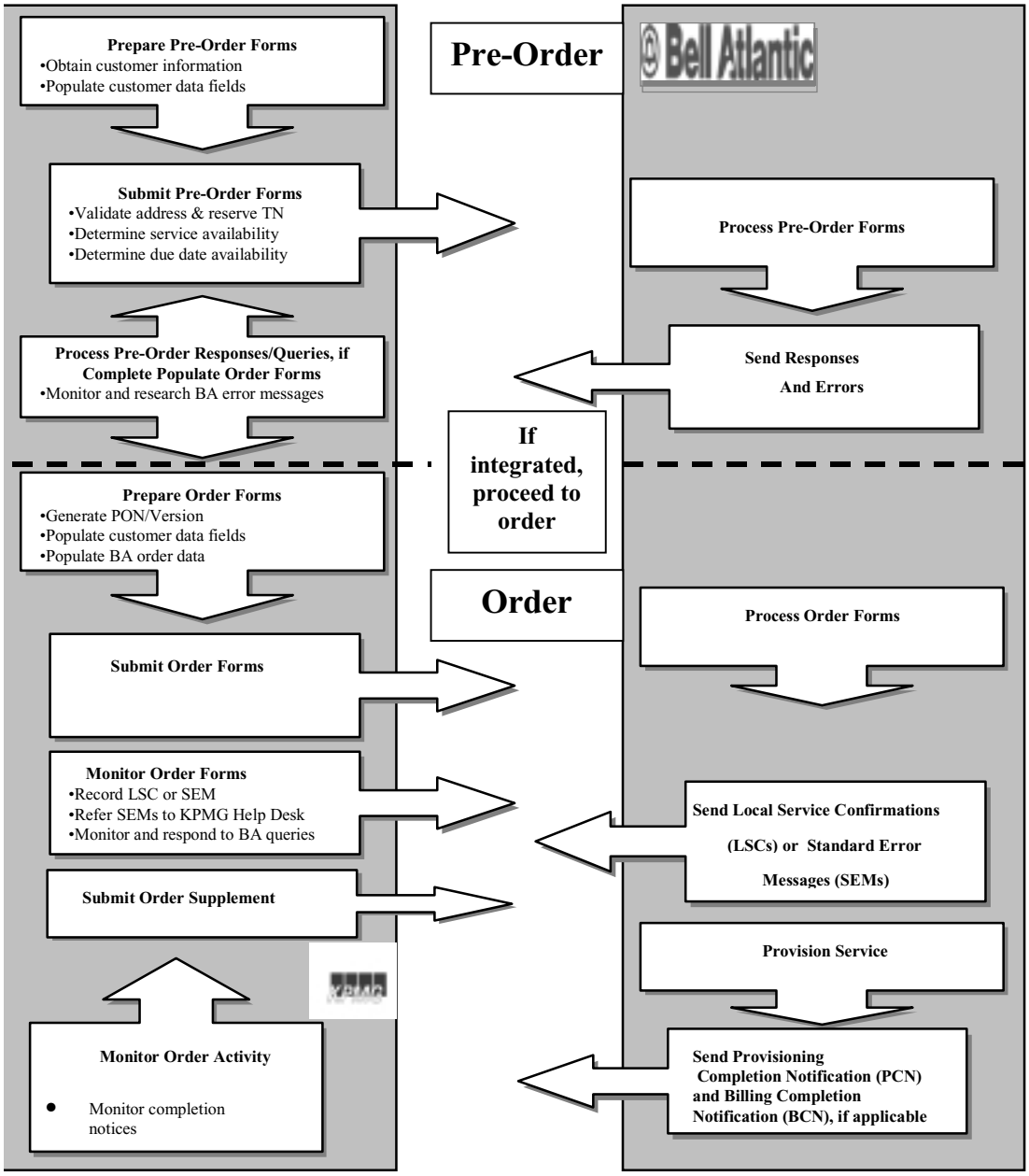
The order process begins with the origination of a local service request by a CLEC. Upon receipt of a Local Service Request (LSR), BA-MA generates a Functional Acknowledgement (FA), indicating that the EDI file has been successfully received. The LSR passes through the BA-MA order processing environment where systems or representatives perform validations to determine if the order is properly formatted and contains accurate data. If errors are found, BA-MA transmits a Standard Error Message (SEM) or a Reject (REJ). Depending upon the condition, CLECs can submit a new or supplemental service request to correct the error. Once the LSR successfully passes through the validation process, a Local Service Confirmation (LSC) is generated. This LSC confirms that BA-MA has validated the LSR and provides a Due Date (DD) on which BA-MA commits to completing the requested service.

BA-MA transmits a Provisioning Completion Notice (PCN) to inform the CLEC that activities to complete the service request have finished.[2] A subsequent Billing Completion Notice (BCN) is delivered following the conclusion of downstream billing system updates.

The chart below provides an overview of the BA-MA EDI Pre-Order and Ordering Processing:

[2] BA-MA does not deliver PCNs and BCNs in response to supplemental service requests to cancel an existing LSR.

Figure 1-1: EDI Functional Evaluation Process



2.2 Scenarios

The following tables list the pre-order and order scenarios used in POP1.

Table 1-1: LSOG 2 Functional Pre-Order Test Scenarios

Pre-Order Activity	Residence	Business
Address Validation Inquiry / Direct Telephone Number (TN) Selection Inquiry	X	X
Conversational TN Selection Inquiry	X	X
Conversational TN Reservation Inquiry	X	X
Access Billing Customer Service Record (CSR) Inquiry	X	X
Customer Service Record Information, CRIS Inquiry	X	X
Directory Listing Inquiry	X	X
Feature and Service Availability Inquiry	X	X
Installation Status Inquiry	X	X
Loop Qualification Inquiry	X	X
xDSL Loop Qualification Inquiry	X	X
Scheduling & Availability Inquiry	X	X
Service Order from SOP Inquiry	X	X
Reservation Maintenance Inquiry	X	X
Reservation Maintenance Modification Inquiry	X	X

Table 1-2: LSOG 2 Functional Order Test Scenarios - Resale

Ordering Activity	Res. POTS	Bus. POTS	Res. ISDN	Bus. ISDN	Centrex	Private Line
Migration from BA-MA "as is"	X	X	X	X	X	
CLEC to CLEC migration	X					
Feature changes to existing customer	X	X			X	
Migration from BA-MA "as specified"	X	X		X	X	
New customer	X					X
Telephone number change	X					
Directory change	X					

Ordering Activity	Res. POTS	Bus. POTS	Res. ISDN	Bus. ISDN	Centrex	Private Line
Add lines/trunks/ circuits	X	X	X		X	X
Suspend/restore service	X					
Disconnect (full and partial)		X				X
Convert line to ISDN			X	X		

Table 1-3: LSOG 2 Functional Order Test Scenarios – Unbundled Network Elements-Platform (UNE-P)

Ordering Activity	Res. POTS	Bus. POTS	Res. ISDN	Bus. ISDN
Migration from BA-MA "as is"	X	X		
Migrate from CLEC to CLEC		X		
Feature changes to existing customer		X		
Migration from BA-MA "as specified"	X	X	X	X
New customer	X	X		
Telephone number change		X		
Directory change	X	X	X	
Add lines/trunks/ circuits		X	X	
Suspend/restore service	X	X		
Disconnect (full and partial)	X	X		X
Moves (inside and outside)		X		
Convert line to ISDN				X
Migrate from CLEC to BA-MA[3]		X		
Convert from Resale to UNE-Platform		X		

[3] Instances of this scenario were not electronically submitted and are not included in the transaction counts in Section 3: Results. KPMG Consulting processed the "win-back" orders by placing phone calls to BA-MA's Win-back Center. KPMG Consulting reviewed subsequent Customer Service Records to validate that all win-back transactions were successfully completed.

Table 1-4: LSOG 2 Functional Order Test Scenarios – UNE-Loop

Ordering Activity	Analog Loop – 2 wire POTS	Digital Loop – ADSL	Digital Loop – HDSL	Digital Loop – DS1
Migrate lines from BA-MA w/o number port[4]	X	X	X	X
Migrate lines from BA-MA with LNP	X			
Add new lines to existing customer	X	X	X	
Add new interoffice DS1/DS3 facilities	X			
Purchase lines for a new customer	X	X	X	X
Disconnect (full and partial)	X			X
Moves (inside and outside)	X			
Convert from UNE-P to UNE loop	X			
Convert from Resale to UNE loop	X			
Port a number from BA-MA to CLEC	X			
Perform a CLEC-to-CLEC migration[5]	X			

Table 1-5: LSOG 2 Functional Order Test Scenarios – UNE Expanded Extended Loop (EEL)

Ordering Activity	DS1/ DS3	2 wire POTS
Migrate lines from BA-MA w/o number port		X
Add new lines to existing EEL	X	X
Purchase lines for a new customer		X
Disconnect (full and partial)		X

[4] BA-MA does not currently support migrations to xDSL service on a single service request. CLECs are required to submit two LSRS: one to disconnect the existing loop, and one to establish a new xDSL Loop. See BA-MA Change Control informational message sent on July 25, 2000.

[5] BA-MA does not currently have a defined process to support CLEC-to-CLEC Loop migrations.

Table 1-6: LSOG 2 Volume Pre-Order Test Scenarios

Pre-Order Activity	Residence	Business
Address Validation Inquiry/ Direct TN Selection Inquiry	X	
Customer Service Record (CSR) Inquiry – Parsed	X	
Customer Service Record (CSR) Inquiry – Unparsed	X	
Directory Listing Inquiry		X
Feature and Service Availability Inquiry	X	
Loop Qualification Inquiry	X	
xDSL Loop Qualification Inquiry		X
Scheduling & Availability Inquiry	X	

Table 1-7: LSOG 2 Volume Order Test Scenarios - Resale

Ordering Activity	Res. POTS	Bus. POTS
Migration from BA-MA "as is"	X	
Feature changes to existing customer		X
Migration from BA-MA "as specified"	X	
New customer	X	
Directory change	X	
Add lines/trunks/ circuits		X
Suspend/restore service	X	
Disconnect (full and partial)		X

Table 1-8: LSOG 2 Volume Order Test Scenarios – UNE-P

Ordering Activity	Res. POTS	Bus. POTS
Migration from BA-MA "as is"	X	
Feature changes to existing customer		X
Migration from BA-MA "as specified"		X
Disconnect (full and partial)	X	
Convert from Resale to UNE-Platform		X

Table 1-9: LSOG 2 Volume Order Test Scenarios – UNE-Loop

Ordering Activity	Analog Loop – 2 wire POTS
Migrate lines from BA-MA w/o number port	X
Purchase lines for a new customer	X
Convert from Resale to UNE loop	X

Table 1-10: LSOG 4 Functional Pre-Order Test Scenarios

Pre-Order Activity	Residence	Business
Address Validation Inquiry / Direct Telephone Number (TN) Selection Inquiry	X	X
Conversational TN Selection Inquiry		X
Conversational TN Reservation Inquiry		X
Access Billing Customer Service Record (CSR) Inquiry	X	X
Customer Service Record Information, CRIS Inquiry	X	
Directory Listing Inquiry		X
Feature and Service Availability Inquiry	X	X
Installation Status Inquiry		X
Loop Qualification Inquiry	X	
xDSL Loop Qualification Inquiry		X
Scheduling & Availability Inquiry	X	
Service Order from SOP Inquiry	X	
Reservation Maintenance Inquiry		X
Reservation Maintenance Modification Inquiry		X

Table 1-11: LSOG 4 Functional Order Test Scenarios - Resale

Ordering Activity	Res. POTS	Bus. POTS	Res. ISDN	Bus. ISDN	Centrex	Private Line
Migration from BA-MA "as is"		X		X	X	
CLEC to CLEC migration	X					
Feature changes to existing customer		X			X	
Migration from BA-MA "as specified"	X	X		X		
New customer	X	X				X
Telephone number change	X					
Directory change	X	X			X	
Add lines/trunks/ circuits					X	X
Suspend/restore service		X				
Disconnect (full and partial)		X	X			
Moves (inside and out)		X				
Convert line to ISDN				X		

Table 1-12: LSOG 4 Functional Order Test Scenarios – Unbundled Network Elements-Platform (UNE-P)

Ordering Activity	Res. POTS	Bus. POTS	Res. ISDN	Bus. ISDN
Migration from BA-MA "as is"		X		X
Migrate from CLEC to CLEC		X		
Feature changes to existing customer	X			
Migration from BA-MA "as specified"	X	X		X
New customer	X	X		
Telephone number change		X		
Directory change		X		
Add lines/trunks/ circuits	X			X
Suspend/restore service	X			
Disconnect (full and partial)	X			
Moves (inside and outside)		X		
Convert line to ISDN				X
Convert from Resale to UNE-Platform		X		

Table 1-13: LSOG 4 Functional Order Test Scenarios – UNE-Loop

Ordering Activity	Analog Loop – 2 wire POTS	Digital Loop – ADSL	Digital Loop – HDSL
Migrate lines from BA-MA w/o number port[6]	X		
Migrate lines from BA-MA with LNP	X		
Add new lines to existing customer	X	X	X
Purchase lines for a new customer	X	X	
Disconnect (full and partial)	X		
Moves (inside and outside)	X		
Convert from UNE-P to UNE loop	X		
Number Port	X		
Convert from Resale to UNE loop	X		
Port a number from BA-MA to CLEC.	X		
Perform a CLEC-to-CLEC migration[7].	X		

Table 1-14: LSOG 4 Functional Order Test Scenarios – UNE Expanded Extended Loop (EEL)

Ordering Activity	2 wire POTS
Migrate lines from BA-MA w/o number port	X
Add new lines to existing EEL	X
Purchase lines for a new customer	X
Disconnect (full and partial)	X

[6] BA-MA does not currently support migrations to xDSL service on a single service request. CLECs are required to submit two LSRS: one to disconnect the existing loop, and one to establish a new xDSL Loop. See BA-MA Change Control informational message sent on July 25, 2000.

[7] BA-MA does not currently have a defined process to support CLEC-to-CLEC migrations.

2.3 Test Targets & Measures

The test target was BA-MA's pre-order and order processes via the EDI interface. Processes, sub-processes, evaluation measures, and associated test cross-reference numbers are summarized in the following tables. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in Section 3.1 "Results & Analysis."

Table 1-15: Test Target Cross-Reference for Pre-orders

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Submit Pre-Order transaction		Accessibility of interface	POP-1-1-1
Submit Pre-Order transaction	Create copy of information usable for subsequent processing	Usability of response information	POP-1-7-1
Submit Pre-Order transaction	Send address request using BTN (AN)	Presence of functionality	POP-1-2-2, POP-1-8-1
Submit Pre-Order transaction	Send address validation request using WTN	Presence of functionality	POP-1-2-2, POP-1-8-1
Submit Pre-Order transaction	Send address validation request using address	Presence of functionality	POP-1-2-2, POP-1-8-1
Submit Pre-Order transaction	Send integrated Pre-Order/Order transaction	Field name compatibility	POP-1-7-1
Submit Pre-Order transaction	Send integrated Pre-Order/Order transaction	Field format compatibility	POP-1-7-1
Submit Pre-Order transaction	Verify receipt of response	Presence of response	POP-1-2-1, POP-1-3-1
Submit Pre-Order transaction	Receive "match" response	Timeliness of response	POP-1-4-2, POP-1-5-2
Submit Pre-Order transaction	Receive "match" response	Accuracy and completeness of response	POP-1-6-1, POP-1-9-1
Submit Pre-Order transaction	Receive "near match" response	Timeliness of response	POP-1-4-2. POP-1-5-2
Submit Pre-Order transaction	Receive "near match" response	Accuracy and completeness of response	POP-1-6-1, POP-1-9-1
Submit Pre-Order transaction	Receive error response	Timeliness of response	POP-1-4-3, POP-1-5-3
Submit Pre-Order transaction	Receive error response	Accuracy of response	POP-1-6-2, POP-1-9-2

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Submit Pre-Order transaction	Receive error response	Clarity and completeness of error message	POP-1-6-2, POP-1-9-1
Submit Pre-Order transaction	Send CSR request using BTN (AN)	Presence of functionality	POP-1-2-2 , POP-1-8-1
Submit Pre-Order transaction	Send CSR request using WTN	Presence of functionality	POP-1-2-2 , POP-1-8-1
Submit Pre-Order transaction	Verify receipt of response	Presence of response	POP-1-2-1, POP-1-3-1
Submit Pre-Order transaction	Receive “match” response	Timeliness of response	POP-1-4-2, POP-1-5-2
Submit Pre-Order transaction	Receive “match” response	Accuracy and completeness of response	POP-1-6-1, POP-1-9-1
Submit Pre-Order transaction	Receive error response	Timeliness of response	POP-1-4-3, POP-1-5-3
Submit Pre-Order transaction	Receive error response	Accuracy of response	POP-1-6-2, POP-1-9-2
Submit Pre-Order transaction	Receive error response	Clarity and completeness of error message	POP-1-6-2, POP-1-9-2
Submit Pre-Order transaction	Send TN request for a specific number(s)	Presence of functionality	POP-1-2-2 , POP-1-8-1
Submit Pre-Order transaction	Send TN request for a random number(s)	Presence of functionality	POP-1-2-2 , POP-1-8-1
Submit Pre-Order transaction	Send TN request for a range of specific numbers	Presence of functionality	POP-1-2-2 , POP-1-8-1
Submit Pre-Order transaction	Verify receipt of response	Presence of response	POP-1-2-1, POP-1-3-1
Submit Pre-Order transaction	Receive available numbers response	Timeliness of response	POP-1-4-2, POP-1-5-2
Submit Pre-Order transaction	Receive available numbers response	Accuracy and completeness of response	POP-1-6-1, POP-1-9-1
Submit Pre-Order transaction	Receive error response	Timeliness of response	POP-1-4-3, POP-1-5-3
Submit Pre-Order transaction	Receive error response	Accuracy of response	POP-1-6-2, POP-1-9-2
Submit Pre-Order transaction	Receive error response	Clarity and completeness of error message	POP-1-6-2, POP-1-9-2

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Submit Pre-Order transaction	Send reservation request for a specific TN	Presence of functionality	POP-1-2-2, POP-1-8-1
Submit Pre-Order transaction	Send reservation request for a single TN	Presence of functionality	POP-1-2-2, POP-1-8-1
Submit Pre-Order transaction	Send reservation request for multiple TNs	Presence of functionality	POP-1-2-2, POP-1-8-1
Submit Pre-Order transaction	Verify receipt of response	Presence of response	POP-1-2-1, POP-1-3-1
Submit Pre-Order transaction	Receive confirmation response	Timeliness of response	POP-1-4-2, POP-1-5-2
Submit Pre-Order transaction	Receive confirmation response	Accuracy and completeness of response	POP-1-6-1, POP-1-9-1
Submit Pre-Order transaction	Receive error response	Timeliness of response	POP-1-4-3, POP-1-5-3
Submit Pre-Order transaction	Receive error response	Accuracy of response	POP-1-6-2, POP-1-9-2
Submit Pre-Order transaction	Receive error response	Clarity and completeness of error message	POP-1-6-2, POP-1-9-2
Submit Pre-Order transaction	Send cancel or exchange reservation for a single TN	Presence of functionality	POP-1-2-2, POP-1-8-1
Submit Pre-Order transaction	Send cancel or exchange for multiple TNs	Presence of functionality	POP-1-2-2, POP-1-8-1
Submit Pre-Order transaction	Verify receipt of response	Presence of response	POP-1-2-1, POP-1-3-1
Submit Pre-Order transaction	Receive confirmation response	Timeliness of response	POP-1-4-2, POP-1-5-2
Submit Pre-Order transaction	Receive confirmation response	Accuracy and completeness of response	POP-1-6-1, POP-1-9-1
Submit Pre-Order transaction	Receive error response	Timeliness of response	POP-1-4-3, POP-1-5-3
Submit Pre-Order transaction	Receive error response	Accuracy of response	POP-1-6-2, POP-1-9-2
Submit Pre-Order transaction	Receive error response	Clarity and completeness of error message	POP-1-6-2, POP-1-9-2

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Request available DID number block(s)	See sub-processes identified for "Request Available Telephone Number(s)" listed above		POP-1-2-1, POP-1-2-2, POP-1-3-1, POP-1-4-2, POP-1-4-3, POP-1-5-2, POP-1-5-2, POP-1-6-1, POP-1-6-2, POP-1-8-1, POP-1-9-1, POP-1-9-2
Reserve DID number block(s)	See sub-processes identified for "Reserve TN(s)" listed above		POP-1-2-1, POP-1-2-2, POP-1-3-1, POP-1-4-2, POP-1-4-3, POP-1-5-2, POP-1-5-2, POP-1-6-1, POP-1-6-2, POP-1-8-1, POP-1-9-1, POP-1-9-2
Cancel DID number block reservation	See sub-processes identified for "cancel TN reservation" listed above		POP-1-2-1, POP-1-2-2, POP-1-3-1, POP-1-4-2, POP-1-4-3, POP-1-5-2, POP-1-5-2, POP-1-6-1, POP-1-6-2, POP-1-8-1, POP-1-9-1, POP-1-9-2
Cancel DID number block reservation	Send service availability request	Presence of functionality	POP-1-2-2, POP-1-8-1
Cancel DID number block reservation	Determine PIC/LPIC availability	Presence of functionality	POP-1-2-2 , POP-1-8-1
Cancel DID number block reservation	Send Integrated Pre-Order/Order transaction	Field name compatibility	POP-1-7-1
Cancel DID number block reservation	Send Integrated Pre-Order/Order transaction	Field format compatibility	POP-1-7-1
Cancel DID number block reservation	Verify receipt of response	Presence of response	POP-1-2-1, POP-1-3-1
Cancel DID number block reservation	Receive availability response	Timeliness of response	POP-1-4-2, POP-1-5-2
Cancel DID number block reservation	Receive availability response	Accuracy of response	POP-1-6-1, POP-1-9-1
Cancel DID number block reservation	Receive availability response	Consistency with retail capability	POP-1-2-2, POP-1-8-1
Cancel DID number block reservation	Receive error response	Timeliness of response	POP-1-4-3, POP-1-5-3
Cancel DID number block reservation	Receive error response	Accuracy of response	POP-1-6-2, POP-1-9-2
Cancel DID number block reservation	Receive error response	Clarity and completeness of error message	POP-1-6-2, POP-1-9-2
Cancel DID number block reservation	Send loop qualification inquiry	Presence of functionality	POP-1-2-2, POP-1-8-1

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Cancel DID number block reservation	Send integrated Pre-Order/Order transaction	Field name compatibility	POP-1-7-1
Cancel DID number block reservation	Send integrated Pre-Order/Order transaction	Field format compatibility	POP-1-7-1
Cancel DID number block reservation	Verify receipt of response	Presence of response	POP-1-2-1, POP-1-3-1
Cancel DID number block reservation	Receive loop qualification response	Timeliness of response	POP-1-4-2, POP-1-5-2
Cancel DID number block reservation	Receive loop qualification response	Accuracy and completeness of response	POP-1-6-1, POP-1-9-1
Cancel DID number block reservation	Receive loop qualification response	Consistency with retail capability	POP-1-2-2, POP-1-8-1
Cancel DID number block reservation	Receive error response	Timelines of response	POP-1-4-3, POP-1-5-3
Cancel DID number block reservation	Receive error response	Accuracy of response	POP-1-6-2, POP-1-9-2
Cancel DID number block reservation	Receive error response	Clarity and completeness of error message	POP-1-6-2, POP-1-9-2
Cancel DID number block reservation	Send xDSL loop qualification inquiry	Presence of functionality	POP-1-2-2, POP-1-8-1
Cancel DID number block reservation	Send integrated Pre-Order/Order transaction	Field name compatibility	POP-1-7-1
Cancel DID number block reservation	Send integrated Pre-Order/Order transaction	Field format compatibility	POP-1-7-1
Cancel DID number block reservation	Verify receipt of response	Presence of response	POP-1-2-1, POP-1-3-1
Cancel DID number block reservation	Receive xDSL loop qualification response	Timeliness of response	POP-1-4-2, POP-1-5-2
Cancel DID number block reservation	Receive xDSL loop qualification response	Accuracy and completeness of response	POP-1-6-1, POP-1-9-1
Cancel DID number block reservation	Receive xDSL loop qualification response	Consistency with retail capability	POP-1-2-2, POP-1-8-1
Cancel DID number block reservation	Receive error response	Timeliness of response	POP-1-4-3, POP-1-5-3
Cancel DID number block reservation	Receive error response	Accuracy of response	POP-1-6-2, POP-1-9-2
Cancel DID number block reservation	Receive error response	Clarity and completeness of error message	POP-1-6-2, POP-1-9-2

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Request access billing customer service record	Create CABS CSR (CCSR) request	Clarity, accuracy, and completeness of documentation	POP-1-6-1
Request access billing customer service record	Send CCSR request using BAN	Presence of functionality	POP-1-2-2, POP-1-8-1
Request access billing customer service record	Send CCSR request using TN	Presence of functionality	POP-1-2-2, POP-1-8-1
Request access billing customer service record	Send CCSR request for the Service and Feature section	Presence of functionality	POP-1-2-2, POP-1-8-1
Request access billing customer service record	Send CCSR request for the Account Summary section	Presence of functionality	POP-1-2-2, POP-1-8-1
Request access billing customer service record	Send CCSR request for the Account ID section	Presence of functionality	POP-1-2-2, POP-1-8-1
Request access billing customer service record	Send CCSR request for the Remarks section	Presence of functionality	POP-1-2-2, POP-1-8-1
Request access billing customer service record	Verify receipt of response	Presence of response	POP-1-2-1, POP-1-3-1
Request access billing customer service record	Receive “match” response	Timeliness of response	POP-1-4-2, POP-1-5-2
Request access billing customer service record	Receive “match” response	Accuracy and completeness of response	POP-1-6-1, POP-1-9-1
Request access billing customer service record	Receive error response	Timeliness of response	POP-1-4-3, POP-1-5-3
Request access billing customer service record	Receive error response	Accuracy of response	POP-1-6-2, POP-1-9-2
Request access billing customer service record	Receive error response	Clarity and completeness of error message	POP-1-6-2, POP-1-9-2
Request access billing customer service record	Send installation status request	Presence of functionality	POP-1-2-2, POP-1-8-1

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Request access billing customer service record	Verify receipt of response	Presence of response	POP-1-2-1, POP-1-3-1
Request access billing customer service record	Receive installation status response	Timeliness of response	POP-1-4-2, POP-1-5-2
Request access billing customer service record	Receive installation status response	Accuracy and completeness of response	POP-1-6-1, POP-1-9-1
Request access billing customer service record	Receive installation status response	Consistency with retail capability	POP-1-2-2, POP-1-8-1
Request access billing customer service record	Receive error response	Timeliness of response	POP-1-4-3, POP-1-5-3
Request access billing customer service record	Receive error response	Accuracy of response	POP-1-6-2, POP-1-9-1
Request access billing customer service record	Receive error response	Clarity and completeness of error message	POP-1-6-2, POP-1-9-2
Request access billing customer service record	Send service order from SOP request	Presence of functionality	POP-1-2-2, POP-1-8-1
Request access billing customer service record	Verify receipt of response	Presence of response	POP-1-2-1, POP-1-3-1
Request access billing customer service record	Receive service order from SOP response	Timeliness of response	POP-1-4-2, POP-1-5-2
Request access billing customer service record	Receive service order from SOP response	Accuracy and completeness of response	POP-1-6-1, POP-1-9-1
Request access billing customer service record	Receive service order from SOP response	Consistency with retail capability	POP-1-2-2, POP-1-8-1
Request access billing customer service record	Receive error response	Timeliness of response	POP-1-4-3, POP-1-5-3
Request access billing customer service record	Receive error response	Accuracy of response	POP-1-6-2, POP-1-9-2

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Request access billing customer service record	Receive error response	Clarity and completeness of error message	POP-1-6-2, POP-1-9-2
Request access billing customer service record	Send directory listing inquiry	Presence of functionality	POP-1-2-2, POP-1-8-1
Request access billing customer service record	Send integrated Pre-Order/Order transaction	Field name compatibility	POP-1-7-1
Request access billing customer service record	Send integrated Pre-Order/Order transaction	Field format compatibility	POP-1-7-1
Request access billing customer service record	Verify receipt of response	Presence of response	POP-1-2-1, POP-1-3-1
Request access billing customer service record	Receive directory listing response	Timeliness of response	POP-1-4-2, POP-1-5-2
Request access billing customer service record	Receive directory listing response	Accuracy and completeness of response	POP-1-6-1, POP-1-9-1
Request access billing customer service record	Receive error response	Timeliness of response	POP-1-4-3, POP-1-5-3
Request access billing customer service record	Receive error response	Accuracy of response	POP-1-6-2, POP-1-9-2
Request access billing customer service record	Receive error response	Clarity and completeness of error message	POP-1-6-2, POP-1-9-2
Request access billing customer service record	Send Scheduling and Availability inquiry	Presence of functionality	POP-1-2-2, POP-1-8-1
Request access billing customer service record	Send integrated Pre-Order/Order transaction	Field name compatibility	POP-1-7-1
Request access billing customer service record	Send integrated Pre-Order/Order transaction	Field format compatibility	POP-1-7-1
Request access billing customer service record	Verify receipt of response	Presence of response	POP-1-2-1, POP-1-3-1

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Request access billing customer service record	Receive Scheduling and Availability response	Timeliness of response	POP-1-4-2, POP-1-5-2
Request access billing customer service record	Receive Scheduling and Availability response	Accuracy and completeness of response	POP-1-6-1, POP-1-9-1
Request access billing customer service record	Receive error response	Timeliness of response	POP-1-4-3, POP-1-5-3
Request access billing customer service record	Receive error response	Accuracy of response	POP-1-6-2, POP-1-9-2
Request access billing customer service record	Receive error response	Clarity and completeness of error message	POP-1-6-2, POP-1-9-2
Request access billing customer service record	Send reservation maintenance inquiry	Presence of functionality	POP-1-2-2, POP-1-8-1
Request access billing customer service record	Verify receipt of response	Presence of response	POP-1-2-1, POP-1-3-1
Request access billing customer service record	Receive reservation maintenance response	Timeliness of response	POP-1-4-2, POP-1-4-3
Request access billing customer service record	Receive reservation maintenance response	Accuracy and completeness of response	POP-1-6-1, POP-1-9-1
Request access billing customer service record	Receive error response	Timeliness of response	POP-1-4-3, POP-1-5-3
Request access billing customer service record	Receive error response	Accuracy of response	POP-1-6-2, POP-1-9-2
Request access billing customer service record	Receive error response	Clarity and completeness of error message	POP-1-6-2, POP-1-9-2
Request access billing customer service record	Send maintenance modification inquiry	Presence of functionality	POP-1-2-2, POP-1-8-1
Request access billing customer service record	Verify receipt of response	Presence of response	POP-1-2-1, POP-1-3-1

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Request access billing customer service record	Receive maintenance modification response	Timeliness of response	POP-1-4-2, POP-1-3-2
Request access billing customer service record	Receive maintenance modification response	Accuracy and completeness of response	POP-1-6-1, POP-1-9-1
Request access billing customer service record	Receive error response	Timeliness of response	POP-1-4-3, POP-1-5-3
Request access billing customer service record	Receive error response	Accuracy of response	POP-1-6-2, POP-1-9-2
Request access billing customer service record	Receive error response	Clarity and completeness of error message	POP-1-6-2, POP-1-9-2
Follow up on delayed Pre-Order activities	Contact pre-ordering work center help desk	Timeliness of answer Availability of support	POP-5-6, POP-5-8
Follow up on delayed Pre-Order activities	Request status of response	Timeliness of response	POP-5-8
Follow up on delayed Pre-Order activities	Request status of response	Accuracy and completeness of response	POP-5-7
Follow up on delayed Pre-Order activities	Escalate request for information	Accuracy and completeness of procedures	POP-5-14
Follow up on delayed Pre-Order activities	Escalate request for information	Compliance to procedures	POP-5-14
Request pre-order transaction population support	Contact appropriate work center or help desk	Timeliness of answer	POP-5-6
Request pre-order transaction population support	Contact appropriate work center or help desk	Availability of support	POP-5-3, POP-5-6
Request pre-order transaction population support	Ask question	Timeliness of response	POP-5-8
Request pre-order transaction population support	Ask question	Accuracy and completeness of response	POP-5-7

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Request pre-order error correction support	Contact appropriate work center or help desk	Timeliness of answer	POP-5-6
Request pre-order error correction support	Contact appropriate work center or help desk	Availability of support	POP-5-3, POP-5-6
Request pre-order error correction support	Ask question	Timeliness of response	POP-5-8
Request pre-order error correction support	Ask question	Accuracy and completeness of response	POP-5-7

Table 1-16: Test Target Cross-Reference for Orders

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Submit order		Accessibility of interface	POP-1-1-2
Submit order	Send order transaction	Presence of functionality	POP-1-2-3, POP-1-8-2
Submit order	Send expedited order transaction	Presence of functionality	POP-1-2-3, POP-1-8-2
Submit order	Receive acknowledgment of request	Timeliness of response	POP-1-4-1, POP-1-5-1
Submit order	Receive acknowledgment of request	Accuracy and completeness of response	POP-1-6-3
Submit order	Verify receipt of response	Presence of response	POP-1-2-1, POP-1-3-1
Submit order	Receive confirmation of request (LSC)	Timeliness of response	POP-1-4-4, POP-1-5, POP-1-5-4, POP-1-5-5
Submit order	Receive confirmation of request (LSC)	Accuracy and completeness of response	POP-1-6-3, POP-1-9-3
Submit order	Receive error/reject notification	Timeliness of response	POP-1-4-6, POP-1-4-7, POP-1-5-7, POP-1-5-7
Submit order	Receive error/reject notification	Accuracy of response	POP-1-6-5, POP-1-9-5
Submit order	Receive error/reject notification	Clarity and completeness of error message	POP-1-6-5, POP-1-9-5
Submit order	Receive acceptance of expedited due date	Timeliness of response	POP-1-4-4, POP-1-4-5, POP-1-5-4, POP-1-5-5
Submit order	Receive acceptance of expedited due date	Accuracy and completeness of response	POP-1-6-3, POP-1-9-3

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Submit order	Receive rejection of expedited due date request	Timeliness of response	POP-1-4-6, POP-1-4-7, POP-1-5-6, POP-1-5-7
Submit order	Receive rejection of expedited due date request	Accuracy and completeness of response	POP-1-6-5, POP-1-9-5
Submit order	Send supplement	Presence of functionality	POP-1-2-3, POP-1-8-2
Submit order	Receive acknowledgement of supplement	Timeliness of response	POP-1-4-6, POP-1-5-6
Submit order	Receive acknowledgement of supplement	Accuracy and completeness of response	POP-1-6-3
Submit order	Verify receipt of response	Presence of response	POP-1-2-1, POP-1-3-1
Submit order	Receive confirmation of supplement	Timeliness of response	POP-1-4-4, POP-1-4-5, POP-1-5-4, POP-1-5-5
Submit order	Receive confirmation of supplement	Accuracy of response	POP-1-6-3, POP-1-9-3
Submit order	Receive error/reject notification	Timeliness of response	POP-1-4-6, POP-1-4-7, POP-1-5-6, POP-1-5-7
Submit order	Receive error/reject notification	Accuracy of response	POP-1-6-5, POP-1-9-5
Submit order	Receive error/reject notification	Clarity and completeness of error message	POP-1-6-5, POP-1-9-5
View completed order information	Inquire on completed order	Presence of functionality	POP-1-2-3, POP-1-8-1
View completed order information	Inquire on completed order	Consistency with retail capability	POP-1-2-2, POP-1-8-1
Follow up on delayed order activities	Contact ordering work center help desk	Timeliness of answer	POP-5-6
Follow up on delayed order activities	Contact ordering work center help desk	Availability of support	POP-5-3
Follow up on delayed order activities	Request status of response	Timeliness of response	POP-5-6
Follow up on delayed order activities	Request status of response	Accuracy and completeness of response	POP-5-7
Follow up on delayed order activities	Escalate request for information	Accuracy and completeness of procedures	POP-5-14

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Follow up on delayed order activities	Escalate request for information	Compliance to procedures	POP-5-14
Follow up on delayed order activities	Monitor closure of request	Completeness and accuracy of follow-up	POP-5-9
Follow up on delayed order activities	Monitor closure of request	Timeliness of answer	POP-5-8
Request order population support	Contact appropriate work center or help desk	Availability of support	POP-5-3, POP-5-6
Request order population support	Ask question	Timeliness of response	POP-5-8
Request order population support	Ask question	Accuracy and completeness of response	POP-5-7
Request order error correction support	Contact appropriate work center or help desk	Timeliness of answer	POP-5-6
Request order error correction support	Contact appropriate work center or help desk	Availability of support	POP-5-3, POP-5-6
Request order error correction support	Ask question	Timeliness of response	POP-5-8
Request order error correction support	Ask question	Accuracy and completeness of response	POP-5-7
Receive Provisioning completion notification	Receive Provisioning completion notification transaction	Timeliness of response	POP-1-4-8
Receive Provisioning completion notification	Receive Provisioning completion notification transaction	Timeliness of dates	POP-7-1-4
Receive Provisioning completion notification	Receive Provisioning completion notification transaction	Accuracy of data	POP-1-6-4, POP-1-9-6
Receive Provisioning completion notification	Match response to order transaction and confirmation	Accuracy of provisioning	POP-7-1-1, POP-7-1-2, POP-7-1-3

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Receive Provisioning completion notification	Verify receipt of completion notification	Completion notification received for all transactions	POP-1-4-8
Receive jeopardy notification[8]	Receive jeopardy notification	Timeliness of notification	N/A
Receive jeopardy notification	Receive jeopardy notification	Timeliness of dates	N/A
Receive jeopardy notification	Receive jeopardy notification	Accuracy of data	N/A
Receive jeopardy notification	Receive jeopardy notification	Frequency of notification	N/A
Receive jeopardy notification	Identify reason for jeopardy	Accuracy of response	N/A
Receive Billing completion notification	Receive Billing completion notification transaction	Timeliness of response	POP-1-4-9
Receive Billing completion notification	Receive Billing completion notification transaction	Timeliness of dates	BLG-6-4-9
Receive Billing completion notification	Receive Billing completion notification transaction	Accuracy of data	POP-1-6-7, POP-1-9-7, BLG-6-4-9

[8] BA-MA Receive jeopardy notification plans to implement an electronic Jeopardy Notification process in August for "Non-Dispatch" orders and in October for "Dispatch" orders (See BA Change Request #1601).

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table 1-17: Data Sources for EDI Functional Evaluation and Volume Performance Test

Document	File Name	Location in Work Papers	Source
Bell Atlantic-North Order Business Rules LSOG 2 Versions 1.7, 1.8.1, and 1.10.1	Hard Copy	Engagement File Work Papers	BA-MA
Bell Atlantic-North Order EDI Guide Issue 8 Versions 1.7, 1.8, and 1.10	Hard Copy	Engagement File Work Papers	BA-MA
Bell Atlantic Pre-Order Business Rules Version LSOG 3 Versions 2.5.1, 2.6.1, 2.7.1, and 2.8.1	Hard Copy	Engagement File Work Papers	BA-MA
Bell Atlantic Pre-Order EDI Guide Version Issue 9 Versions 2.5, 2.6, and 2.8.1	Hard Copy	Engagement File Work Papers	BA-MA
Bell Atlantic Order Business Rules Version LSOG 4 Versions 4.1.1 and 4.3.1	Hard Copy	Engagement File Work Papers	BA-MA
Bell Atlantic Order EDI LSOG Mechanization Specification Versions 4.1.1 and 4.3.1	Hard Copy	Engagement File Work Papers	BA-MA
Bell Atlantic Pre-Order Business Rules LSOG 4 Versions 4.1.1 and 4.3.1	Hard Copy	Engagement File Work Papers	BA-MA
Bell Atlantic Pre-Order EDI Guide Issue 9 Versions 4.1.1 and 4.3.1	Hard Copy	Engagement File Work Papers	BA-MA
Bell Atlantic CLEC Handbook Series, Volume I (March 1999 and March 2000 versions)	Hard Copy	Engagement File Work Papers	BA-MA

Document	File Name	Location in Work Papers	Source
Bell Atlantic CLEC/ Resale Handbook Series Volume II (September 1999 and March 2000 versions)	Hard Copy	Engagement File Work Papers	BA-MA
Bell Atlantic CLEC Handbook Series, Volume III (March 1999 and March 2000 versions)	Hard Copy	Engagement File Work Papers	BA-MA
Bell Atlantic Resale Handbook Series, Volume I (September 1999)	Hard Copy	Engagement File Work Papers	BA-MA
Bell Atlantic Resale Handbook Series, Volume III (September 1999)	Hard Copy	Engagement File Work Papers	BA-MA
Bell Atlantic Direct Carrier Access System (DCAS) User Guide for Unbundled Network Elements (UNEs) (As supplied during Bell Atlantic training in October 1999)	Hard Copy	Engagement File Work Papers	BA-MA
Bell Atlantic Telecom Industry Service Resale Training Non-Complex Products and Services Student Guide (As supplied during Bell Atlantic training in October 1999)	Hard Copy	Engagement File Work Papers	BA-MA
Bell Atlantic Telecom Industry Service Resale Training Complex Products and Services Student Guide (As supplied during Bell Atlantic training in October 1999)	Hard Copy	Engagement File Work Papers	BA-MA
MA USOC Codes (FTP January 11, 2000)	Hard Copy	Engagement File Work Papers	BA-MA
Bell Atlantic Access Service Request (ASR) Business Rules Versions 21 and 21.3	Hard Copy	Engagement File Work Papers	BA-MA

Document	File Name	Location in Work Papers	Source
Resale, Volume III 3.4 Date Due Provisioning Processes / Intervals	Hard Copy	POP-1-A-1	BA-MA
Bell Atlantic Pre-Order, Order and Trouble Administration Error Messages, February 2000	Hard Copy	POP-1-A-2	BA-MA
Intervals for Unbundled Network Elements	UNEInterval.xls	POP-1-A-3	BA-MA
Resale Intervals	ResaleInterval.xls	POP-1-A-4	BA-MA
Initial State Customer Service Records (CSRs)	StartCSR.mdb	POP-1-B-1	KPMG Consulting
Post-Activity Customer Service Records (CSRs)	PostCSR.mdb	POP-1-C-1	KPMG Consulting
POP Test Bed Specifications	POPtestbedspecs.xls	POP-1-D-1	KPMG Consulting
Test Case Master	MALSOG2testcase.xls	POP-1-D-2	KPMG Consulting
Transaction Submission Schedule	MALSOG2sched.xls	POP-1-D-3	KPMG Consulting
Facilities Management Tracking Log	MALSOG2facil.xls	POP-1-D-4	KPMG Consulting
Pre-Order/Order Integration Log	MAIntegration.xls	POP-1-D-5	KPMG Consulting

Document	File Name	Location in Work Papers	Source
EDI Downtime Log (Compilation of BA-MA Change Control Notices)	MAEDIDown.xls	POP-1-D-6	KPMG Consulting
Expected Results Analysis Log	MAEDIExpected.xls	POP-1-D-7	KPMG Consulting
Actual Monthly Pre-Order and Order Transaction Quantities	MAVoltransqty.xls	POP-1-E-1	BA-MA
Actual Time of Day Distribution of Pre-Orders and Orders	MAVoldistrib.xls	POP-1-E-1	BA-MA
Forecasted Order Levels – Bell Atlantic	MAVolOrderfrcst.xls	POP-1-E-1	BA-MA
Actual Monthly Pre-Order and Order Transaction Quantities	MAVoltransqtyCLEC.xls	POP-1-E-1	CLECs
Forecasted Order Levels - CLECs	MAVolOrderfrcstCLEC.xls	POP-1-E-1	CLECs

2.4.1 Data Generation/Volumes

Appropriate transaction levels for Volume testing were determined by analyzing the available pre-order types and flow-through eligible order delivery methods and activity types.

The number of transactions submitted for Normal Volume testing was determined using forecast information obtained from BA-MA and CLECs as an input. KPMG Consulting projected Normal Volumes for pre-order and order transactions in October 2000.

The Peak test was designed to replicate a level of activity that BA-MA experiences during peak periods. The BA-MA order data was analyzed for Peak days over the first quarter of 2000, and the five days with the highest total order level were compared to the average level over the same period. This data was found to support a peak level activity of 125% of a Normal day.

In the Stress test, the BA-MA systems were tested at volume levels between 150% and 200% of baseline level activities.

2.5 Evaluation Methods

The Master Test Plan defined a range of pre-order and order scenarios to be tested in POP1. The scenarios outline, at a high level, the specific products and services to be ordered and activity types to be requested. Using these test scenario descriptions, KPMG Consulting developed test cases for each scenario. The test cases contain a more detailed description of the order to be executed, defining, for example, customer types (business and residential), migration activity (partial and full migration[9]), and flow-through designations.

Each test case was then used to generate distinct pre-order and order transactions. BA-MA provided "test bed accounts" against which pre-order and order transactions could be placed. The Pre-Order and Order transaction scenarios and test cases represented a range of service families (e.g., POTS, ISDN, and Centrex) executed against a variety of service delivery methods (i.e., Resale, UNE, and UNE-P) and activity types (e.g., New, Change, Disconnect, Move).

2.5.1 Functional Evaluation

Transaction responses were evaluated for consistency with the pre-order and order business process flow, as described in section 2.1. In addition, KPMG Consulting evaluated transactions to determine if they "flowed-through" BA-MA interfaces without human intervention. For both sets of test activities, KPMG Consulting evaluated the timeliness, accuracy, clarity, and completeness of responses.

To prepare pre-order and order transactions, KPMG Consulting used the BA-MA business rules and EDI Guide. The business rules detail the form and field information needed to submit valid pre-order inquiries and order requests. The EDI Guide details instructions for mapping business field entries to EDI transaction sets for transmission to BA-MA.

KPMG Consulting used an internally developed end-user application to populate pre-order and order transactions. The transactions were then sent to the Test Transaction Generator (TTG - Hewlett Packard). The TTG translated the transaction data into EDI format and transmitted the pre-order or order request to BA-MA. EDI responses received from BA-MA were translated back through the TTG into the pre-defined format. These were loaded into the end-user application for analysis by KPMG Consulting.

The TTG was responsible for recording date and timestamp information at the transaction level.

[9] A full migration converts all of a customer's lines to a new service provider. A partial migration retains at least one-line with BA-MA and converts some lines to a CLEC.

KPMG Consulting submitted stand-alone pre-orders and orders to evaluate BA-MA system functionality. Pre-orders were also submitted to obtain information necessary to validate customer information or to provide input for a subsequent order. Additionally, KPMG Consulting submitted a limited number of manually integrated pre-order/order transactions. KPMG Consulting also designed and built an application that automatically transferred telephone number reservation and due date availability information from pre-order responses to target LSR fields.

KPMG Consulting tracked the status and progress of submitted pre-orders and orders. Error responses were researched (either internally or with the BA-MA Help Desk), corrected, and re-submitted as appropriate. KPMG Consulting also investigated missing, late, and/or incorrect responses.

2.5.2 Volume Performance Test

For the Volume Performance test, KPMG Consulting submitted a mix of pre-order and order transactions over a four day schedule. Transactions were analyzed for trends relative to time of day, service delivery method, and product family. KPMG Consulting collected and evaluated the timestamps associated with all outgoing EDI pre-order and order submissions, as well as the time stamps associated with all incoming EDI responses. In addition, KPMG Consulting evaluated transactions to determine if they "flowed-through" BA-MA interfaces without human intervention.

The Volume Performance Test differed from the Functional Test in two ways:

1. Orders were sent using training mode to allow multiple orders for the same account to be sent without exhausting the test bed; and
2. Orders chosen were flow-through eligible.

The Volume Performance Test was conducted in three phases:

1. A Normal volume test using projected transaction volume levels for October 2000, run over two 24-hour periods.[10]
2. A Peak test using volumes at 125% of the normal volume test, run over one 24-hour period. In this test, a number of transactions were purposely submitted with error conditions.
3. A Stress test using volumes at 150% of the normal volume test, gradually increasing to 200%, run over one four-hour period.

[10] Some transactions executed in the 24-hour test were submitted during BA-MA's Service Order Processor scheduled downtime: 12AM to 7AM on non-holiday weekdays.

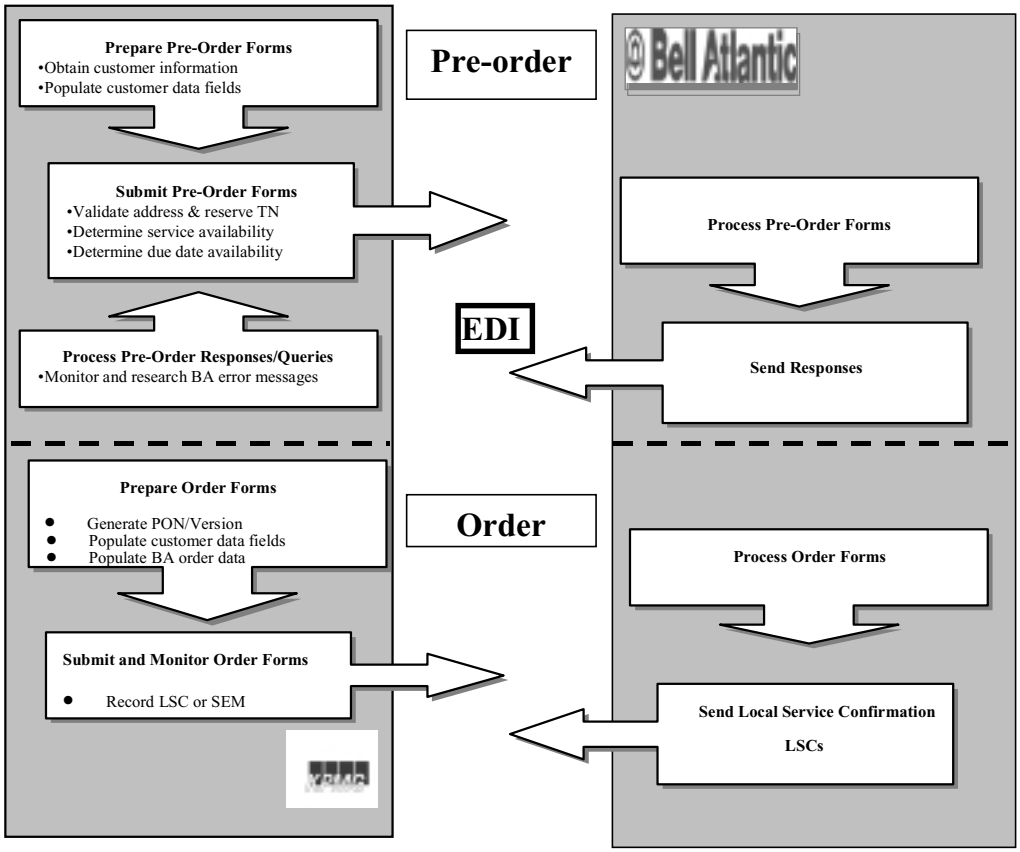
The pre-order and order transaction volumes calculated for Normal day testing were developed using information provided by BA-MA and the CLEC community. Peak day and Stress day volumes were derived from BA-MA volume history for Bell Atlantic-North.

All three Volume Tests (Normal, Peak and Stress) used the same set of test cases, with one exception. For the Peak Test, a number of pre-order and order transactions were submitted with error conditions to test how BA-MA's systems handled such transactions under Volume Test conditions.

For each volume day, the planned pre-order and order transactions were distributed throughout the testing window based on BA-MA's reported hourly distribution. Once the distribution was determined, each transaction was then assigned an interface (EDI, GUI) through which it was to be submitted. 96% were submitted through EDI and 4% through the GUI. The orders and pre-orders were distributed over the test scenarios described in Section 2.2.

As pre-order and order volume transactions were submitted, positive confirmations or error messages were returned and recorded. A transaction was deemed complete if one of the following was received: a positive pre-order response, a local service confirmation (LSC), or an error message. The chart below provides an overview of the Volume Performance Test process:

Figure 1-2: EDI Volume Test Process



2.6 Analysis Methods

The EDI Functional Evaluation and Volume Performance Test included a checklist of evaluation criteria developed by the KPMG Consulting during the initial phase of the Bell Atlantic-Massachusetts OSS Evaluation. These evaluation criteria, detailed in the *Master Test Plan*, provided the framework of norms, standards, and guidelines for the POP1 evaluation.

The data collected were analyzed employing the evaluation criteria referenced above.

Where applicable, results in this section were calculated based on KPMG Consulting timestamps, which may differ significantly from the time measurement points reported in the New York State Carrier-to-Carrier Guidelines (C2C): Performance Standards and Reports[11]. KPMG Consulting assigned results to evaluation criteria based on standards defined in the C2C metrics. For those evaluation criteria that do not map to the C2C metrics or map to metrics for which no standard was available, KPMG Consulting has applied its own guideline, based on our professional judgment.

3.0 Results Summary – LSOG 2

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of the EDI Functional Evaluation and Volume Performance Test of LSOG 2 transactions are presented in the table below.

[11] In a letter dated January 14, 2000, the MA Department of Telecommunications and Energy (DTE) directed KPMG Consulting to use the New York Carrier-to-Carrier Guidelines as the basis for evaluations outlined in the MA *Master Test Plan*. The February 28, 2000 Carrier-to-Carrier Guidelines are the most recent version available at the time of this report writing.

Table 1-18: POP1 Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
	Interface Availability:		
POP-1-1-1	EDI pre-order capability is consistently available during scheduled hours of operation.[12]	Satisfied	During the course of this test, KPMG Consulting monitored instances of pre-order interface downtime as reported by BA-MA Change Control notices. Based on information derived from these downtime notices, KPMG Consulting observed that the BA-MA EDI pre-order interface was available during 100% of scheduled hours of availability.[13]
POP-1-1-2	EDI order transaction capability is consistently available during scheduled hours of operation.[14]	Satisfied	During the course of this test, KPMG Consulting monitored instances of order interface downtime as reported by BA-MA Change Control notices. Based on information derived from these downtime notices, KPMG Consulting observed that the BA-MA order interface was available during 100% of scheduled hours of availability.[15]

[12] Scheduled hours of "Prime Time" availability are defined as 6AM – 12 midnight Monday through Saturday, excluding holidays. Scheduled hours of "Non-Prime Time" are defined as 12:01 – 5:59 AM Monday through Saturday, plus Sundays and holidays.

[13] KPMG Consulting reviewed BA-MA Change Control notices concerning total interface downtime (and not specific back-end system downtimes) to calculate interface availability results.

[14] Scheduled hours of "Prime Time" availability are defined as 6AM – 12 midnight Monday through Saturday, excluding holidays. Scheduled hours of "Non-Prime Time" are defined as 12:01 – 5:59 AM Monday through Saturday, plus Sundays and holidays.

[15] KPMG Consulting reviewed BA-MA Change Control notices concerning total interface downtime (and not specific back-end system downtimes) to calculate interface availability results.

Test Cross-Reference	Evaluation Criteria	Result	Comments
	Presence of Functionality:		
POP-1-2-1	BA-MA systems or representative provides responses to all transaction.	Satisfied	Of the 980 pre-order transactions sent during the Functional Evaluation, 94% received responses from BA-MA.[16] 98% of the 1332 order transactions submitted to BA-MA during the Functional Evaluation received responses from BA-MA.
POP-1-2-2	BA-MA system or representative provides required pre-order functionality.	Satisfied	BA-MA systems and representatives provided appropriate functionality to process all of the pre-order transaction types evaluated during the course of this test (see Table 1-1).
POP-1-2-3	BA-MA system or representative provides required order transaction functionality.	Satisfied	Of the order transaction types evaluated during the course of this test (see Tables 1-2 through 1-5), three contained functionality deficiencies. KPMG Consulting has been unable to consistently execute Resale Private Line (RPL) service requests for line additions or new services successfully execute caption listing orders or migrations to UNE EEL with an upgrade to ISDN BRI.[17]
	Presence of Functionality – Volume Performance Test:		
POP-1-3-1	BA-MA system or representative provides responses to all transactions.	Satisfied	Of the 52,964 pre-order transactions sent during the Volume Test, 99.9% received responses. See Table 1-6 for preorder transaction types submitted during the Volume Test. Of the 21,012 order transactions sent during the Volume Test, 99.7% received responses. See Tables 1-7 through 1-9 for order transaction types submitted during the Volume Test.

[16] BA-MA implemented software fixes on ADR, DDA, LQB, and PSA pre-orders in response to Help Desk tickets regarding missing responses. 6% of the total pre-orders submitted did not receive responses. Following BA-MA software fixes, 2% of the pre-orders are still without response.

[17] Retests have been confirmed (LSC) by BA-MA and KPMG Consulting is waiting the standard interval for completion notices (PCN and BCN).

Test Cross-Reference	Evaluation Criteria	Result	Comments
	Timeliness of Response – Functional Evaluation:		
POP-1-4-1	BA-MA systems return timely Functional Acknowledgements (FAs).	Satisfied	LSRs submitted for the Functional Evaluation received FAs within the following timeframes: ♦ 98.4% of 1,332 FAs were received within 1 minute. ♦ An additional 1.2% were received within 10 minutes. ♦ The remaining 0.4% were received within 18 minutes. ♦ See Chart 1-3 for additional detail on FA timeliness.
POP-1-4-2	BA-MA system or representative provides timely pre-order responses.	Satisfied	The standard for pre-order response timeliness defined in the C2C Guidelines is "Parity plus not more than four seconds." [18] For those pre-orders evaluated against BA-MA retail data: ♦ Average response time for DDAs, ADRs (both stand-alone address validations and validations combined with a TN reservation), parsed and non-parsed CSRs was within the associated C2C standards. ♦ Average response time for PSAs exceeded the associated C2C standards. However, 95% of PSAs were received within 10 seconds.

[18] BA-MA pre-order timeliness data (i.e., parity measures) were obtained from BA-MA EnView simulation data for the period May 15 through June 12. KPMG Consulting pre-order timeliness measures were compared to this parity standard in order to derive results.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			♦ BA-MA retail analog data was not available for all pre-order inquiry types. For those pre-orders not evaluated against BA-MA retail data: ♦ Average response time for DLRs, LQBs, SORs, TR3s, TR5s, and CCSRs was within 10 seconds. ♦ Average response time for LXRs was 10.3 seconds. See Table 1-14 for additional detail on pre-order response timeliness.
POP-1-4-3	BA-MA system or representative provides timely pre-order error messages.	Satisfied	The standard for pre-order response timeliness defined in the C2C Guidelines is "Parity plus not more than four seconds". Based on BA-MA Retail analog data, this standard equates to 4.06 seconds[19]. For the Functional Evaluation, BA-MA delivered pre-order errors within an average of 3.79 seconds.
POP-1-4-4	BA-MA system or representative provides timely Local Service Confirmations (LSCs) in response to Flow-Through (FT) LSRs.	Satisfied	The standard for LSC response timeliness defined in the C2C Guidelines for FT orders is 95% received within two hours. Based on KPMG Consulting test data, FT LSCs were returned within the following timeframes:[20] ♦ 96.1% of LSCs on Resale orders were received within 2 hours. ♦ 100% of LSCs on UNE-Loop orders were received within 2 hours. ♦ 97.5% of LSCs on UNE-Platform orders were received within 2 hours. See Table 1-15 for additional detail on FT LSC timeliness.

[19] BA-MA pre-order timeliness data (i.e., parity measures) were obtained from BA-MA EnView simulation data for the period May through June 12. KPMG Consulting pre-order timeliness measures were compared to this parity standard in order to derive results.

[20] KPMG Consulting did not receive information from BA-MA on the actual FT or NFT status for all LSRs submitted. In the absence of actual FT information, KPMG Consulting utilized expected FT or NFT indicators to determine timeliness results. Five Resale, 1 UNE-L and 4 UNE-P transactions were placed in the FT LSC category based on KPMG Consulting's expected FT indicators.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-1-4-5	BA-MA system or representative provides timely Local Service Confirmations (LSCs) in response to Non-Flow-Through (NFT) LSRs.	Satisfied	The standard for LSC response timeliness defined in the C2C Guidelines for NFT orders for < 10 lines is 95% received within 24 hours. Based on Functional Evaluation data, < 10 line NFT LSCs were returned within the following timeframes:[21] ♦ 100% of LSCs on Resale orders were received within 24 hours. ♦ 98.7% of LSCs on UNE-Loop orders were received within 24 hours. ♦ 98.9% of LSCs on UNE-Platform orders were received within 24 hours. ♦ The C2C standard for NFT orders >= 10 lines is 72 hours. ♦ Based on Functional Evaluation data, >= 10 line NFT LSCs were returned within the following timeframes: ♦ 100% of LSCs on Resale orders were received within 72 hours. ♦ 100% of LSCs on Interconnection trunk orders were received within 72 hours. See Table 1-15 for additional detail on NFT LSC timeliness.

[21] KPMG Consulting did not receive information from BA-MA on the actual FT or NFT status for all LSRs submitted. In the absence of actual FT information, KPMG Consulting utilized expected FT or NFT indicators to determine timeliness results. One Interconnection Trunk, 7 Resale, 13 Resale Complex, 1 UNE Complex, 9 UNE-L, and 3 UNE-P transactions were placed in the NFT LSC category based on KPMG Consulting's expected FT indicators.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-1-4-6	BA-MA system or representative provides timely Standard Error Messages (SEMs) in response to Flow-Through (FT) LSRs.	Satisfied	The standard for SEM response timeliness defined in the C2C Guidelines for FT orders is 95% received within two hours. Based on KPMG Consulting test data, FT SEMs were returned within the following timeframes:[22] ♦ 100% of SEMs on Resale orders were received within 2 hours. ♦ 100% of SEMs on UNE-Loop orders were received within 2 hours. ♦ 95.0% of SEMs on UNE-Platform orders were received within 2 hours. See Table 1-15 for additional detail on FT SEM timeliness.
POP-1-4-7	BA-MA system or representative provides timely Standard Error Messages (SEMs) in response to Non-Flow-Through (NFT) LSRs.		The standard for SEM response timeliness defined in the C2C Guidelines for NFT orders for less than 10 lines is 95% received within 24 hours. Based on Functional Evaluation data, NFT SEMs were returned within the following timeframes:[23] ♦ 99.3% of SEMs on Resale orders were received within 24 hours. ♦ 98.8% of SEMs on UNE-Loop orders were received within 24 hours. ♦ 100% of SEMs on UNE-Platform orders were received within 24 hours. ♦ The C2C standard for NFT orders >= 10 lines is 72 hours.

[22] KPMG Consulting did not receive information from BA-MA on the actual FT or NFT status for all LSRs submitted. In the absence of actual FT information, KPMG Consulting utilized expected FT or NFT indicators to determine timeliness results. Eight Resale, 1 UNE-L, and 4 UNE- P transactions were placed in the FT SEM category based on KPMG Consulting's expected FT indicators.

[23] KPMG Consulting did not receive information from BA-MA on the actual FT or NFT status for all LSRs submitted. In the absence of actual FT information, KPMG Consulting utilized expected FT or NFT indicators to determine timeliness. Three Interconnection Trunks, 25 Resale, 23 Resale Complex, 1 UNE Complex, 20 UNE-L, and 6 UNE-P transactions were placed in the NFT SEM category based on KPMG Consulting's expected FT indicators.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			♦ Based on Functional Evaluation data, >= 10 line NFT SEMs were returned within the following timeframes: ♦ 100% of SEMs on Resale orders were received within 72 hours. ♦ 100% of SEMs on Interconnection trunk orders were received within 72 hours. See Table 1-15 for additional detail on NFT SEM timeliness.
POP-1-4-8	BA-MA system or representative provides timely Provisioning Completion Notifications (PCNs).	Satisfied	The standard for PCN response timeliness defined in the C2C Guidelines for Resale and UNE[24] orders is 95% of PCNs delivered by noon one business day following work completion.[25] Of the 592[26] Resale and UNE PCNs received: ♦ 92.9% were delivered by noon one business day following the PCN CD.[27] ♦ An additional 4.1% were delivered after noon on the business day following the PCN CD and 2.5% were delivered two business days following the CD. ♦ BA-MA delivered multiple PCN responses for 2% of total orders receiving PCNs. See Table 1-16 for additional detail of PCN response timeliness.

[24] The C2C Guidelines exclude UNE Loop coordinated conversion orders from the PCN Timeliness calculation. KPMG Consulting data presented represents all Resale and UNE PCNs received, including Loop coordinated conversions.

[25] KPMG Consulting derived a service order's provisioning completion date from the Completion Date (CD) data element returned within the PCN response.

[26] In addition, 14 expected PCNs were not received. The majority of these orders subsequently received BCNs without receiving a PCN.

[27] Of these, eight PCNs (1%) were delivered *prior* to the completion date identified on the response.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-1-4-9	BA-MA system or representative provides timely Billing Completion Notifications (BCNs).	Satisfied	KPMG Consulting calculated BCN timeliness as the difference between receipt of BCN and the billing completion date.[28] Of the 581 BCNs received,[29] 74.7% were delivered by noon the business day following the BCN CD. An additional 9.1% were received after noon on the business day following the BCN CD and 9.5% received two business days following the BCN CD. See Table 1-17 for additional detail of BCN response timeliness.
	Timeliness of Response – Volume Performance Test:		
POP-1-5-1	BA-MA systems return timely Functional Acknowledgements (FAs).	Satisfied	LSRs submitted for the Volume Performance Test received FAs within the following timeframes: ♦ 84.3% of 21,012 FAs were received within 1 minute. ♦ An additional 6.5% were received within 10 minutes. ♦ The remaining 9.2% were received within 26 minutes. See Chart 1-4 for additional detail on FA timeliness.

[28] KPMG Consulting derived a service order's billing completion date from the Completion Date (CD) data element returned within the BCN response. Per BA-MA, this value does not equate to the actual CRIS completion date.

[29] An additional 20 orders receiving PCNs did *not* receive BCNs.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-1-5-2	BA-MA system or representative provides timely pre-order responses.	Satisfied	The standard for pre-order response timeliness defined in the C2C Guidelines is "Parity plus not more than four seconds."[30] Average response time for parsed & non-parsed CSRs, DDAs, and ADRs (both stand-alone address validations and validations combined with a TN reservation) was within the associated C2C standards. Average response time for PSAs exceeded the associated C2C standards. However, 99.0% of PSAs were received within 10 seconds. Retail analog data was not available for all pre-order inquiry types. For those pre-orders not evaluated against BA-MA retail data: Average response time for DLRs, and LQBs was within 10 seconds. Average response time for LXRs was 17.9 seconds. See Table 1-18 for additional detail of pre-order response timeliness.
POP-1-5-3	BA-MA system or representative provides timely pre-order error messages.	Satisfied	The standard for pre-order response timeliness defined in the C2C Guidelines is "Parity plus not more than four seconds". Based on BA-MA Retail analog data, this standard equates to 4.06 seconds.[33] For the Volume Performance test, BA-MA delivered pre-order errors within an average of 4.81 seconds. However, 96.9% of error responses were received within 10 seconds.

[30] BA-MA pre-order timeliness data (i.e., parity measures) were obtained from BA-MA EnView simulation data for the period May 15 through June 12. KPMG Consulting pre-order timeliness measures were compared to this parity standard in order to derive results.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-1-5-4	BA-MA system or representative provides timely Local Service Confirmations (LSCs) in response to Flow-Through (FT) LSRs.	Satisfied	The standard for LSC response timeliness defined in the C2C Guidelines for FT orders is 95% received within two hours. For the Volume Performance test, FT LSCs were returned within the following timeframes.[31] ♦ 99.9% of LSCs on Resale orders were received within 2 hours. ♦ 100% of LSCs on UNE-Loop orders were received within 2 hours. ♦ 100% of LSCs on UNE-Platform orders were received within 2 hours.
POP-1-5-5	BA-MA system or representative provides timely Local Service Confirmations (LSCs) in response to Non-Flow-Through (NFT) LSRs.[32]	Satisfied	The standard for LSC response timeliness defined in the C2C Guidelines for NFT orders with < 10 lines is 95% received within 24 hours. For the Volume Performance test, NFT LSCs were returned within the following timeframes.[33] ♦ 100% of LSCs on UNE-Loop orders were received within 24 hours. ♦ 100% of LSCs on UNE-Platform orders were received within 24 hours.

[31] A total of 4,620 Resale, 3,776 UNE-Loop, and 9,663 UNE-Platform FT LSCs were received during Volume testing.

[32] During the Volume Performance test, 1,083 transactions sent during SOP downtime (12am-7am) did not Flow Through. These transactions were processed as "Level 4" non flow-through orders, which fall out to the TISOC for a minimal amount of manual handling.

[33] A total of 265 UNE-Loop and 1,041 UNE-Platform NFT LSCs were received during Volume testing.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-1-5-6	BA-MA system or representative provides timely Standard Error Messages (SEMs) in response to Flow-Through (FT) LSRs.	Satisfied	The standard for SEM response timeliness defined in the C2C Guidelines for FT orders is 95% received within two hours. For the Volume Performance, FT SEMs were returned within the following timeframes.[34] ♦ 100% of SEMs on Resale orders were received within 2 hours. ♦ 100% of SEMs on UNE-Loop orders were received within 2 hours. ♦ 100% of SEMs on UNE-Platform orders were received within 2 hours.
POP-1-5-7	BA-MA system or representative provides timely Standard Error Messages (SEMs) in response to Non-Flow-Through (NFT) LSRs.	Satisfied	The standard for SEM response timeliness defined in the C2C Guidelines for NFT orders with < 10 lines is 95% received within 24 hours. For the Volume Performance test, NFT SEMs were returned within the following timeframes.[35] ♦ 100% of SEMs on Resale orders were received within 24 hours. ♦ 100% of SEMs on UNE-Loop orders were received within 24 hours. ♦ 100% of SEMs on UNE-Platform orders were received within 24 hours.

[34] A total of 354 Resale, 143 UNE-Loop, and 714 UNE-Platform FT SEMs were received during Volume testing.

[35] A total of three Resale, one UNE-Loop, and one UNE-Platform NFT SEMs were received during Volume testing.

Test Cross-Reference	Evaluation Criteria	Result	Comments
	Accuracy of Response:		
POP-1-6-1	BA-MA system or representative provides clear, accurate and complete pre-order responses.	Satisfied	A sample of pre-order responses was examined for clarity, completeness, and accuracy relative to the BA-MA business rules. Pre-order responses were complete with respect to BA-MA Business Rule requirements. However, Address Validation responses provided inaccurate content relative to the subsequent LSR requirements[36].
POP-1-6-2	BA-MA system or representative provides clear, accurate and relevant pre-order error messages.	Satisfied	A sample of pre-order errors was examined for clarity, completeness, and accuracy relative to the BA-MA business rules. Error messages were received in response to invalid pre-order requests. Pre-order error responses were complete with respect to BA-MA Business Rule requirements. However, the error remarks (RMK) did not provide an adequate level of information to determine the cause of error in all cases examined. For example, error messages such as "Missing/Invalid Transaction" do not provide a clear indication of the error source.

[36] The Address Validation pre-order response returned a 'SUIT' or "UNIT" in the location detail. An 'APT' was required on the subsequent order. Of the sample ADRs reviewed, 64% returned inaccurate location data.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-1-6-3	BA-MA system or representative provides clear, accurate and complete Local Service Confirmations (LSCs).	Satisfied	A sample of LSCs was examined for clarity, accuracy, and completeness relative to the BA-MA business rules. BA-MA LSCs provided clear, accurate and complete information in accordance with BA-MA Business Rules. All of the fields required by the BA-MA Business Rules were present and the data was populated correctly.
POP-1-6-4	Provisioning due dates identified within BA-MA's order confirmations are consistent with the CLEC's valid due date request (e.g., a due date selected in accordance with the product's standards interval or if appropriate, from the "Smarts Clock" application).	Satisfied	For purposes of measuring this evaluation criteria, KPMG Consulting used a standard of 95% consistency between LSC Due Date[37] (DD) = LSR Desired Due Date (LSR DDD). [38] 94.6% of confirmed DDs identified within LSCs met the requested DDDs. 3.6% of LSCs contained DDs later than the requested DDD, while the remaining 1.8% of LSCs contained DDs earlier than the requested DDD.[39]
POP-1-6-5	BA-MA system or representative provides clear, accurate and complete Standard Error Messages (SEMs).	Satisfied	A sample of SEMs was examined for clarity, completeness, and accuracy relative to the BA-MA business rules. SEMs were received in response to invalid LSRs, and contained remarks (RMK) providing reasonable information to determine the cause of the error.

[37] LSC Due Date (DD) is defined as the due date provided in the LSC. It is the date on which BA-MA commits to complete provisioning of a customer's service request.
[38] LSR Desired Due Date (LSR DDD) is defined as the due date requested in a customer's LSR.
[39] 5.4% of total LSCs were returned with modified Due Dates. Of these, 87.5% were received in response to Desired Due Dates deviating from the BA-MA standard service intervals. BA-MA did *not* transmit SEMs in response to these invalid due date requests.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			The information provided was not in accordance with BA-MA Business Rules in all cases. KPMG Consulting found that the required fields for CLEC Customer Name, Activity/Feature, Negotiator Name and TN, and Reseller Requested Due Time were consistently omitted from the SEMs returned. However, these SEM fields were not essential to KPMG Consulting error resolution activities. See POP-4 Results for additional information on this issue.
POP-1-6-6	BA-MA system or representative provides accurate and complete Provisioning Completion Notifications (PCNs).	Satisfied	A sample of PCNs was examined for completeness and accuracy relative to the BA-MA business rules. PCNs provided by BA-MA were both accurate and in accordance with BA-MA Business Rules. All of the fields required by the BA-MA Business Rules were present and the data was populated correctly.
POP-1-6-7	BA-MA system or representative provides accurate and complete Billing Completion Notifications (BCNs).	Satisfied	A sample of BCNs was examined for completeness and accuracy relative to the BA-MA business rules. BCNs were received in response to orders which had completed in BA-MA billing systems. As reported in POP-4 Results, the BA-MA Business Rules imply that a CLEC will receive one Completion (CMP) notice. This conflicts with the EDI Guide, which states that a CMP file may contain one or more BCNs.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-1-6-7	BA-MA system or representative provides accurate and complete Billing Completion Notifications (BCNs).	Satisfied	KPMG Consulting reviewed the fields on each BCN response for completeness relative to the Business Rules applying to the single CMP response. The information provided on the BCN was not in accordance with BA-MA Business Rules in all cases. KPMG Consulting found that the fields 'DATASIZE' and 'SEGNUM' were required by the BA-MA Business Rules, but were consistently omitted from the BCN. However, these BCN fields were not essential to KPMG Consulting billing initiation activities.
	Pre-Order/Order Integration:		
POP-1-7-1	Pre-Order and Order field names and field formats are compatible.	Satisfied	Information received in response to Due Date Availability and TN Reservation pre-orders was consistent with input requirements for corresponding fields in an LSR. Information transferred between fields received in response to Directory Listing inquiries and the corresponding field in the LSR was inconsistent with respect to field format.[40] While the formats of the pre-order and order fields did not agree in one case, data content returned on the pre-order responses adequately fulfills order form input requirements.

[40] The Directory Listing pre-order response returns the 'LALOC' in full text (e.g., BOSTON) which is inconsistent with the abbreviation (e.g., BOS) required on the LSR.

4.0 Results Summary – LSOG 4

This section identifies the evaluation criteria and test results.

4.1 Results & Analysis

The LSOG 4 Evaluation assessed BA-MA's process for handling pre-orders and orders submitted via the EDI interface. This test includes the editing process performed by Request Manager. During this test, KPMG Consulting submitted a mix of stand-alone pre-orders and orders, as well as integrated pre-order and order transaction sets. This test is intended to assess only the functionality of LSOG 4.

The results of the EDI Functional Evaluation of LSOG 4 transactions are presented in the table below.

Table 1-19: POP1 Evaluation Criteria and Results

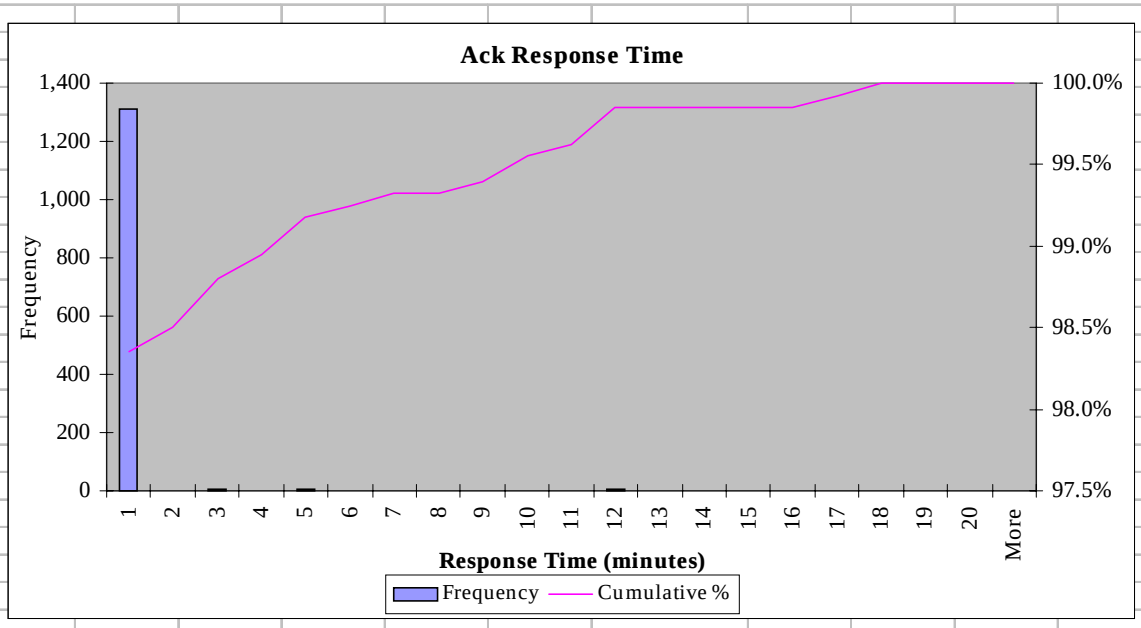
Test Cross-Reference	Evaluation Criteria	Result	Comments
	Presence of Functionality:		
POP-1-8-1	BA-MA system or representative provides required pre-order functionality.	Satisfied	BA-MA systems and representatives provided appropriate functionality to process all of the pre-order transaction types evaluated during the course of this test (see Table 1-10).[41]
POP-1-8-2	BA-MA system or representative provides required order transaction functionality.	Satisfied	Of the order transaction types evaluated during the course of this test (see Tables 1-11 through 1-14), one contained functionality deficiencies. KPMG Consulting has been unable to successfully process service requests to add Resale Centrex lines.[42]

[41] KPMG Consulting has successfully re-tested BA-MA's Conversational TN pre-order functionality.
[42] KPMG Consulting is currently re-testing BA-MA's functionality for ordering Resale Centrex line additions.

Test Cross-Reference	Evaluation Criteria	Result	Comments
	Accuracy of Response:		
POP-1-9-1	BA-MA system or representative provides clear, accurate and complete pre-order responses.	Satisfied	A sample of pre-order responses was examined for clarity, completeness, and accuracy relative to the BA-MA business rules. Pre-order responses were complete with respect to BA-MA Business Rule requirements in all cases.
POP-1-9-2	BA-MA system or representative provides clear, accurate and relevant pre-order error messages.	Satisfied	A sample of pre-order errors was examined for clarity, completeness, and accuracy relative to the BA-MA business rules. *Error messages were received in response to invalid pre-order requests and contained remarks (RMK) providing reasonable information to determine the cause of the error.* *In addition, pre-order error responses were complete with respect to BA-MA Business Rule requirements.*
POP-1-9-3	BA-MA system or representative provides clear, accurate and complete Local Service Request Local Responses (LSRLRs).	Satisfied	A sample of LSRLRs was examined for clarity, completeness, and accuracy relative to the BA-MA business rules. BA-MA LSRLRs for Resale and UNE-P orders provided clear, accurate and complete information in accordance with BA-MA Business Rules. On Resale and UNE-P LSRLRs, all of the fields required by the BA-MA Business Rules were present and the data was populated correctly. LSRLRs received for Loop orders failed to include the conditional fields DISC NBR and EC VER when the conditions requiring field population were met. These fields were not essential for KPMG Consulting ordering activities.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-1-9-4	Provisioning due dates identified within BA-MA's order confirmations are consistent with the CLEC's valid due date request (e.g., a due date selected in accordance with the product's standards interval or if appropriate, from the "Smarts Clock" application).	Not Complete	KPMG Consulting continues to analyze results of Due Date accuracy.
POP-1-9-5	BA-MA system or representative provides clear, accurate and complete Error Messages (ERRs).	Satisfied	A sample of ERRs was examined for clarity, completeness, and accuracy relative to the BA-MA business rules. ERRs were received in response to LSRs with errors, and contained remarks (RMK) providing reasonable information to determine the cause of the error. The information provided was in accordance with BA-MA Business Rules.
POP-1-9-6	BA-MA system or representative provides accurate and complete Provisioning Completion Messages (PCMs).	Satisfied	A sample of PCMs was examined for completeness and accuracy relative to the BA-MA business rules. PCMs provided by BA-MA were both accurate and in accordance with BA-MA Business Rules.
POP-1-9-7	BA-MA system or representative provides accurate and complete Billing Completion Messages (BCMs).	Satisfied	A sample of BCMs was examined for completeness and accuracy relative to the BA-MA business rules. BCMs provided by BA-MA were both accurate and in accordance with BA-MA Business Rules.

Figure 1-3: LSOG 2 Functional Acknowledgement (FA) Timeliness (Functional Evaluation)



Time (minutes)	*Frequency*	*Cumulative %*
1	1,310	98.35%
2	2	98.50%
3	4	98.80%
4	2	98.95%
5	3	99.17%
6	1	99.25%
7	1	99.32%
8	0	99.32%
9	1	99.40%
10	2	99.55%
11	1	99.62%
12	3	99.85%
13	0	99.85%
14	0	99.85%
15	0	99.85%
16	0	99.85%
17	1	99.92%
18	1	100.00%
19	0	100.00%
20	0	100.00%
More	0	100.00%
Total	1,332	

Table 1-14: LSOG 2 Pre-Order Response Timelines (Functional Evaluation)

Query Type	Number of Valid Responses	Range of Response Time (Sec)		Avg Response Time (Sec)	
		Min	Max	Standard	KPMG Consulting
ADR (add)	59	2	16	8.10	3.88
ADR - (add/TN)	91	3	21	8.94	4.77
CCSR	9	4	19	N/A	6.89
CSR (non-parsed)	4	4	8	6.38	6.25
CSR (parsed)	22	4	13	10.41	6.73
DDA	112	2	19	4.20	3.07
DLR	14	1	3	N/A	2.14
LQB	29	3	26	N/A	8.28
LXR	97	2	52	N/A	10.31
PSA	24	2	11	4.30	4.92
SOR	29	2	10	N/A	4.59
TR3	35	3	6	N/A	3.63
TR5	8	2	4	N/A	3.38
Total	**533**	**1**	**52**		**5.43**

Notes:

1. These results excludes "Time Outs", or pre-order queries for which an error message was not returned within 60 seconds (ADR/TNs within 330 seconds).
2. ADR (add) results include responses received on stand-alone address validations.
3. ADR (add/TN) results include responses received on address validations performed in conjuntion with TN reservations.
4. Standard average is derived from BA-MA EnView averages, plus 4 seconds. N/A indicates no BA-MA standard available.

Table 1-15: LSOG 2 Local Service Confirmation (LSC) and Standard Error Message (SEM) Timeliness (Functional Evaluation)

		SEM			LSC		
		Flow	Non Flow-Through		Flow	Non Flow-Through	
		Through	< 10 lines	>= 10 lines	Through	< 10 lines	>= 10 lines
Interconnection Trunk	Total responses	2		6	0		6
	Total ontime responses	2		6	0		6
	% Ontime	100.00%		100.00%			100.00%
Resale	Total responses	65	95	46	75	91	16
	Total ontime responses	65	94	46	72	91	16
	% Ontime	100.00%	98.95%	100.00%	96.00%	100.00%	100.00%
Resale Complex	Total responses	1	55		1	29	
	Total ontime responses	1	55		1	29	
	% Ontime	100.00%	100.00%		100.00%	100.00%	
UNE Complex	Total responses	9	17		8	43	
	Total ontime responses	9	17		8	43	
	% Ontime	100.00%	100.00%		100.00%	100.00%	
UNE L	Total responses	79	80		86	237	
	Total ontime responses	79	79		86	234	
	% Ontime	100.00%	98.75%		100.00%	98.73%	
UNE P	Total responses	60	39		80	98	
	Total ontime responses	57	39		78	97	
	% Ontime	95.00%	100.00%		97.50%	98.98%	
Total	Total responses	216	286	52	250	498	22
	Total ontime responses	213	284	52	245	494	22
	% Ontime	98.61%	99.30%	100.00%	98.00%	99.20%	100.00%

Table 1-16: LSOG 2 Provisioning Completion Notification (PCN) Timeliness (Functional Evaluation)

	Interconnection Trunk		Resale		Resale - Complex		UNE-Complex		UNE-L		UNE-P		Total	
	count	%	count	%	count	%	count	%	count	%	count	%	count	%
Total PCNs Received	4		163		17		42		209		157		592	
Total PCNs Rcvd by noon 1 bus day after PCN CD	2	50.00%	151	92.64%	16	94.12%	34	80.95%	193	92.34%	154	98.09%	550	92.91%
Total PCNs Rcvd after noon 1 bus day after PCN CD	2	50.00%	12	7.36%	1	5.88%	8	19.05%	16	7.66%	3	1.91%	42	7.09%
Late 1 day	1	25.00%	7	4.29%	1	5.88%	4	9.52%	10	4.78%	1	0.64%	24	4.05%
Late 2 days		0.00%	3	1.84%		0.00%	4	9.52%	6	2.87%	2	1.27%	15	2.53%
Late 3 days		0.00%	2	1.23%		0.00%		0.00%		0.00%		0.00%	2	0.34%
Late 4 days		0.00%		0.00%		0.00%		0.00%		0.00%		0.00%	0	0.00%
Late 5 days	1	25.00%		0.00%		0.00%		0.00%		0.00%		0.00%	1	0.17%
Late 6 days or more		0.00%		0.00%		0.00%		0.00%		0.00%		0.00%	0	0.00%
Late Summary	2	50.00%	12	7.36%	1	5.88%	8	19.05%	16	7.66%	3	1.91%	42	7.09%
Early 1 day		0.00%	1	0.61%		0.00%		0.00%		0.00%	1	0.64%	2	0.34%
Early 2 days		0.00%		0.00%		0.00%		0.00%		0.00%	1	0.64%	1	0.17%
Early 3 days		0.00%		0.00%		0.00%		0.00%		0.00%		0.00%	0	0.00%
Early 4 days		0.00%		0.00%		0.00%		0.00%	1	0.48%		0.00%	1	0.17%
Early 5 days		0.00%		0.00%		0.00%		0.00%	1	0.48%		0.00%	1	0.17%
Early 6 days or more		0.00%		0.00%		0.00%		0.00%	4	1.91%		0.00%	4	0.68%
Early Summary	0	0.00%	1	0.61%	0	0.00%	0	0.00%	6	2.87%	2	1.27%	9	1.52%

Notes:
1. Late 1 day = PCN received after noon one business day following PCN CD.
2. Late 2 days = PCN received two business days following PCN CD.
3. Early 1 day = PCN received one business day prior to PCN CN.

Table 1-17: LSOG 2 Billing Completion Notification (BCN) Timeliness (Functional Evaluation)

	Interconnection Trunk		Resale		Resale - Complex		UNE-Complex		UNE-L		UNE-P		Total	
	count	%	count	%	count	%	count	%	count	%	count	%	count	%
Total BCNs Received	4		156		17		42		199		163		581	
Total BCNs Rcvd by noon one bus day after BCN CD	2	50.00%	122	78.21%	14	82.35%	32	76.19%	127	63.82%	137	84.05%	434	74.70%
Total BCNs Rcvd after noon one bus day after BCN CD	2	50.00%	34	21.79%	3	17.65%	10	23.81%	72	36.18%	26	15.95%	147	25.30%
Late 1 day		0.00%	9	5.77%	1	5.88%	4	9.52%	32	16.08%	7	4.29%	53	9.12%
Late 2 days		0.00%	11	7.05%		0.00%	5	11.90%	31	15.58%	8	4.91%	55	9.47%
Late 3 days	1	25.00%	11	7.05%	2	11.76%		0.00%		0.00%	10	6.13%	24	4.13%
Late 4 days		0.00%	2	1.28%		0.00%		0.00%	3	1.51%	1	0.61%	6	1.03%
Late 5 days		0.00%		0.00%		0.00%		0.00%		0.00%		0.00%	0	0.00%
Late 6 - 19 days	1	25.00%	1	0.64%		0.00%	1	2.38%	6	3.02%		0.00%	9	1.55%
Late Summary	2	50.00%	34	21.79%	3	17.65%	10	23.81%	72	36.18%	26	15.95%	147	25.30%

Notes:
1. Late 1 day = BCN received after noon one business day following the BCN CD.
2. Late 2 days = BCN received two business days following the BCN CD.

Figure 1-4: LSOG 2 Functional Acknowledgement (FA) Timeliness (Volume Evaluation)

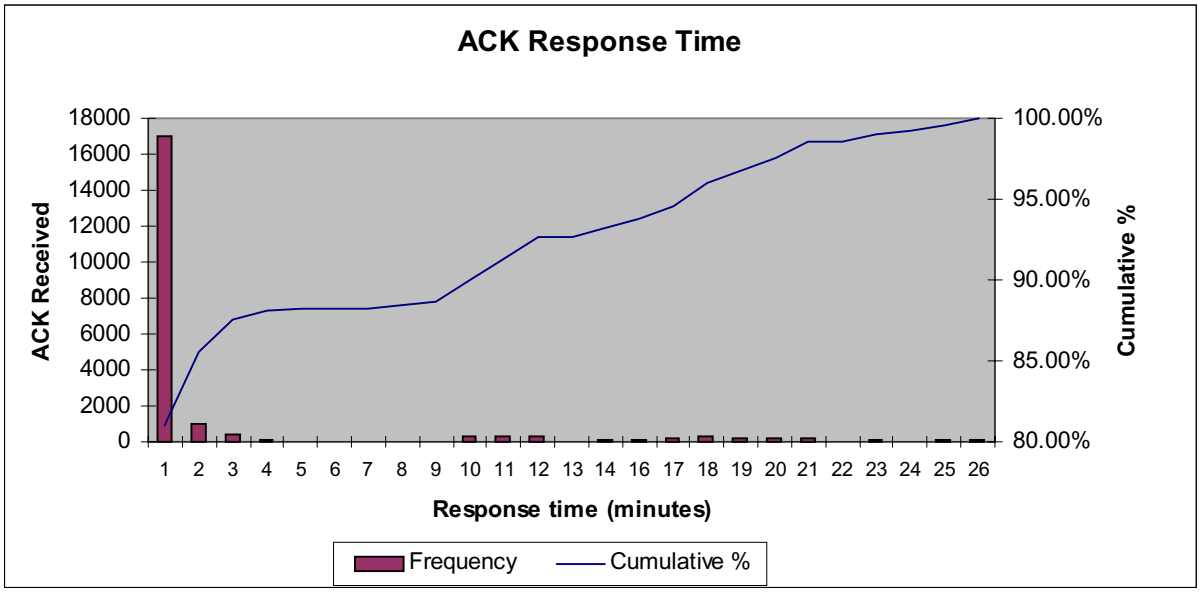


Table 1-18: LSOG 2 Pre-Order Response Timeliness (Volume Evaluation)

Query Type	Number of Valid Responses	Range of Response Time (Sec)		Average Response Time (Sec)	
		Min	Max	Standard	KPMG Consulting
ADR (add)	2604	2	38	8.10	4.28
ADR (add/TN)	991	4	67	8.94	5.72
CSR (non-parsed)	25993	1	55	6.38	6.14
CSR (parsed)	2585	4	53	10.41	7.41
DDA	4991	1	24	4.20	3.99
DLR	2547	1	22	N/A	3.42
LQB	2049	3	51	N/A	7.18
LXR	2075	15	55	N/A	17.96
PSA	2581	2	60	4.30	4.39
Count	46416	1	67		6.19

B. Test Results: GUI Functional Evaluation and Volume Performance Test (POP2)

1.0 Description

The Graphical User Interface (GUI) Functional Evaluation and Volume Performance Test (POP2) evaluated the relevant systems, processes, and other operational elements associated with the Bell Atlantic-Massachusetts (BA-MA) pre-order and order processes. The objective of this test was to validate the existence, functionality, and performance of the interface and processes required by BA-MA for pre-ordering and ordering transaction submissions and responses. POP2 consisted of two components: 1) Functional Evaluation, and 2) Volume Performance Test.

Functional Evaluation

The Functional Evaluation assessed BA-MA's process for handling pre-orders and orders submitted via the GUI. During this test, KPMG Consulting submitted a mix of stand-alone pre-orders and orders, and integrated pre-order and order transaction sets (pre-order response information was used to populate subsequent service requests). Pre-orders and orders with planned errors, expedites, and supplemental service orders such as cancel requests, feature changes, and due date changes were also tested.

Volume Performance Test

The Volume Performance Test reviewed BA-MA's system capabilities, response intervals, and other compliance measures for pre-order and order transactions sent via GUI. The test used projected transaction volumes for the October 2000 timeframe, simulating normal, peak and stress volume conditions.

Volume Performance Test orders were sent in "training mode" whereby order processing stops after service order generation and does not go through provisioning. Order transactions were limited to those that flow through BA-MA's order processing systems without human intervention. Additionally, functional transactions were submitted concurrent with the volume test.

2.0 Methodology

This section describes the test approach and methodology used to execute the GUI Functional Evaluation and Volume Performance Test.

2.1 Business Process Description

The GUI is accessed by logging in with SecureId through the BA-MA firewall and establishing an interface to the BA-MA GUI application. Once the BA-MA GUI has been accessed, CLECs can submit transactions.

KPMG Consulting evaluated the pre-ordering process and the ordering process. In the pre-ordering process, CLECs submit inquiries to validate existing customer information, to inquire on facility and technician availability, and to obtain data (e.g., telephone numbers, service feature codes) that may be input on subsequent service orders. In response to a pre-order inquiry, BA-MA posts a valid pre-order response or an error message.

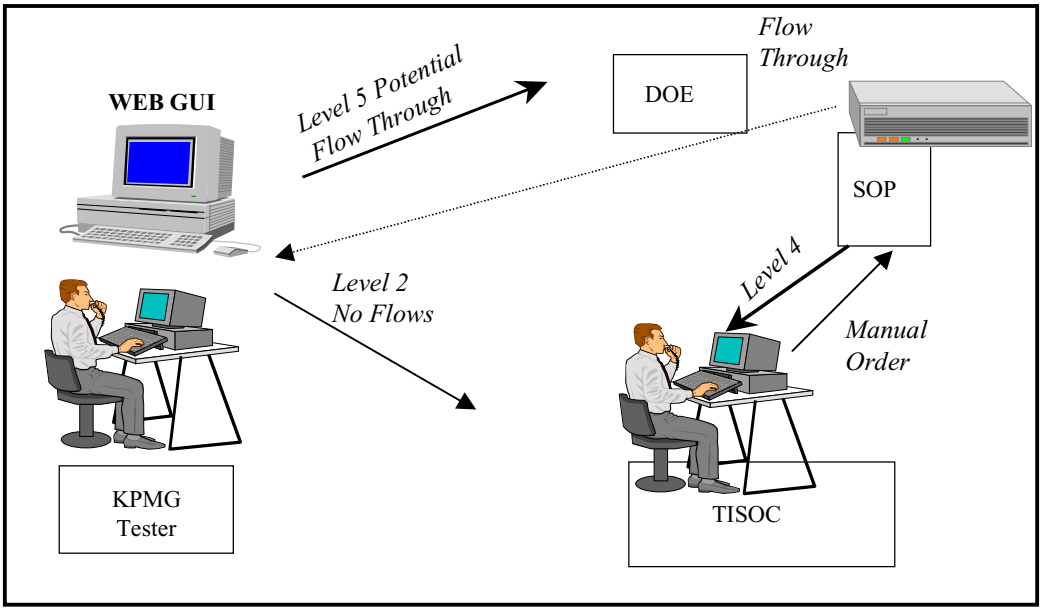
The order process begins with the origination of a Local Service Request (LSR) by a CLEC. Upon receipt of an LSR, BA-MA posts a Functional Acknowledgement (FA) to the web,[43] indicating that the GUI file has been successfully received. The LSR passes through the BA-MA order processing environment where systems or representatives perform validations to determine if the order is properly formatted and contains accurate data. If errors are found, BA-MA generates a Standard Error Message (SEM). Depending upon the condition, CLECs can submit a new or supplemental LSR to correct the error. Once the LSR successfully passes through the validation process, a Local Service Confirmation (LSC) is generated. This LSC confirms that BA-MA has validated the LSR and provides a Due Date (DD) on which BA-MA commits to completing the requested service.

BA-MA transmits a Provisioning Completion Notice (PCN) to inform the CLEC that activities to complete the service request have finished.[44] A subsequent Billing Completion Notice (BCN) is delivered following the conclusion of downstream billing system updates.

The chart below provides an overview of the BA-MA GUI Pre-Order and Ordering Processing:

[43] A Functional Acknowledgement is an interim message that is overlaid with the subsequent response.
[44] BA-MA does not deliver PCNs and BCNs in response to supplemental service requests to cancel an existing LSR.

Figure 2-1: GUI Pre-Ordering and Ordering Process



2.2 Scenarios

The following tables list the pre-order and order scenarios used in POP2.

Table 2-1: LSOG 2 Functional Pre-Order Test Scenarios

Pre-Order Activity	Residence	Business
Address Validation Inquiry / Direct Telephone Number (TN) Selection Inquiry	X	X
Conversational TN Selection Inquiry	X	X
Conversational TN Reservation Inquiry	X	X
Access Billing Customer Service Record (CSR) Inquiry	X	X
Customer Service Record Information, CRIS Inquiry	X	X
Directory Listing Inquiry	X	X
Feature and Service Availability Inquiry	X	X
Installation Status Inquiry	X	X
Loop Qualification Inquiry	X	X
xDSL Loop Qualification Inquiry	X	X
Scheduling & Availability Inquiry	X	X

Pre-Order Activity	Residence	Business
Service Order from SOP Inquiry	X	X
Reservation Maintenance Inquiry	X	X
Reservation Maintenance Modification Inquiry	X	X

Table 2-2: LSOG 2 Functional Order Test Scenarios: Resale

Ordering Activity	Res. POTS	Bus. POTS	Res. ISDN	Bus. ISDN	Centrex	Private Line
Migration from BA-MA "as is"	X	X		X	X	
CLEC to CLEC migration	X					
Feature changes to existing customer	X	X			X	
Migration from BA-MA "as specified"	X	X		X	X	
New customer	X					X
Telephone number change	X					
Directory change	X					
Add lines/trunks/ circuits	X	X	X		X	X
Suspend/restore service	X					
Disconnect (full and partial)		X				X
Convert line to ISDN			X	X		

Table 2-3: LSOG 2 Functional Order Test Scenarios: UNE-P

Ordering Activity	Res. POTS	Bus. POTS	Res. ISDN	Bus. ISDN
Migration from BA-MA "as is"	X	X		
Migrate from CLEC to CLEC		X		
Feature changes to existing customer		X		
Migration from BA-MA "as specified"	X	X	X	X
New customer	X	X		
Telephone number change		X		
Directory change	X	X	X	
Add lines/trunks/ circuits		X	X	
Suspend/restore service	X			
Disconnect (full and partial)	X	X		X
Moves (inside and outside)		X		
Convert line to ISDN				X
Convert from Resale to UNE-Platform		X		

Table 2-4: LSOG 2 Functional Order Test Scenarios: UNE - Loop

Ordering Activity	Analog Loop – 2 wire POTS	Digital Loop – ASDL	Digital Loop – HDSL	Digital Loop – DS1
Migrate lines from BA-MA w/o number port[45]	X	X	X	X
Migrate lines from BA-MA with LNP	X			
Add new lines to existing customer	X	X	X	
Add new interoffice DS1/DS3 facilities	X			
Purchase lines for a new customer	X	X	X	X
Disconnect (full and partial)	X			X
Moves (inside and outside)	X			

[45] BA-MA does not currently support migrations to xDSL service on a single request. CLECs are required to submit two LSRs: one to disconnect the existing loop, and one to establish a new xDSL loop. See BA-MA Change Control informational message sent on July 25, 2000.

Ordering Activity	Analog Loop – 2 wire POTS	Digital Loop – ASDL	Digital Loop – HDSL	Digital Loop – DS1
Port a number from BA-MA to CLEC	**X**			
Perform a CLEC-to-CLEC migration[46]	**X**			

Table 2-5: LSOG 2 Functional Order Test Scenarios: UNE EEL

Ordering Activity	2 wire POTS
Migrate lines from BA-MA w/o number port	**X**
Add new lines to existing EEL	**X**
Purchase lines for a new customer	**X**
Disconnect (full and partial)	**X**

Table 2-6: LSOG 2 Volume Pre-Order Test Scenarios

Pre-Order Activity	Residence	Business
Address Validation Inquiry/ Direct TN Selection Inquiry	**X**	
Customer Service Record (CSR) Inquiry – Parsed	**X**	
Customer Service Record (CSR) Inquiry – Unparsed	**X**	
Directory Listing Inquiry		**X**
Feature and Service Availability Inquiry	**X**	
Loop Qualification Inquiry	**X**	
xDSL Loop Qualification Inquiry		**X**
Scheduling &Availability Inquiry	**X**	

[46] BA-MA does not currently have a defined process to support CLEC-to-CLEC Loop migrations.

Table 2-7: LSOG 2 Volume Order Test Scenarios: Resale

Ordering Activity	Res. POTS	Bus. POTS
Migration from BA-MA "as is"	X	
Feature changes to existing customer		X
Migration from BA-MA "as specified"	X	X
New customer	X	
Telephone number change	X	
Directory change	X	
Add lines/trunks/ circuits		X
Suspend/restore service	X	
Disconnect (full and partial)		X

Table 2-8: LSOG 2 Volume Order Test Scenarios: UNE-P

Ordering Activity	Res. POTS	Bus. POTS
Migration from BA-MA "as is"	X	
Feature changes to existing customer		X
Migration from BA-MA "as specified"		X
Disconnect (full and partial)	X	
Convert from Resale to UNE-Platform		X

Table 2-9: LSOG 2 Volume Order Test Scenarios: UNE - Loop

Ordering Activity	Analog Loop – 2 wire POTS
Migrate lines from BA-MA w/o number port	X
Purchase lines for a new customer	X
Convert from resale to UNE loop	X

Table 2-10: LSOG 4 Functional Pre-Order Test Scenarios

Pre-Order Activity	Residence	Business
Address Validation Inquiry / Direct Telephone Number (TN) Selection Inquiry	X	X
Conversational TN Selection Inquiry		X
Conversational TN Reservation Inquiry		X
Access Billing Customer Service Record (CSR) Inquiry	X	X
Customer Service Record Information, CRIS Inquiry	X	
Directory Listing Inquiry		X
Feature and Service Availability Inquiry	X	X
Installation Status Inquiry		X
Loop Qualification Inquiry	X	
xDSL Loop Qualification Inquiry		X
Scheduling & Availability Inquiry	X	
Service Order from SOP Inquiry	X	
Reservation Maintenance Inquiry		X
Reservation Maintenance Modification Inquiry		X

Table 2-11: LSOG 4 Functional Order Test Scenarios: Resale

Ordering Activity	Res. POTS	Bus. POTS	Res. ISDN	Bus. ISDN	Centrex	Private Line
Migration from BA-MA "as is"		X				
CLEC to CLEC migration	X					
Migration from BA-MA "as specified"	X	X		X		
Telephone number change	X					
Directory change	X					
Add lines/trunks/ circuits					X	X
Disconnect (full and partial)		X				
Moves (inside and outside)		X				

Table 2-12: LSOG 4 Functional Order Test Scenarios: UNE-P

Ordering Activity	Res. POTS	Bus. POTS	Res. ISDN	Bus. ISDN
Migration from BA-MA "as is"		X		
Migration from BA-MA "as specified"	X			X
New customer		X		
Add lines/trunks/circuits				X
Suspend/restore service	X			
Disconnect (full and partial)	X			
Moves (inside and outside)		X		
Convert line to ISDN				X

Table 2-13: LSOG 4 Functional Order Test Scenarios: UNE - Loop

Ordering Activity	Analog Loop – 2 wire POTS	Digital Loop – ASDL	Digital Loop – HDSL
Migrate lines from BA-MA w/o number port[47]	X	X	X
Migrate lines from BA-MA with LNP	X		
Add new lines to existing customer		X	
Purchase lines for a new customer	X		
Port a number from BA-MA to CLEC	X		
Perform a CLEC-to-CLEC migration[48]	X		

2.3 Test Targets & Measures

The test target was BA-MA's pre-order and order processes via the GUI. Processes, sub-processes, evaluation measures, and associated test cross-reference numbers are summarized in the following table. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in Section 3.1 "Results & Analysis."

[47] BA-MA does not currently support migrations to xDSL service on a single request. CLECs are required to submit two LSRs: one to disconnect the existing loop, and one to establish a new xDSL loop. See BA-MA Change Control informational message sent on July 25, 2000.

[48] BA-MA does not currently have a defined process to support CLEC-to-CLEC migrations.

Table 2-14: Test Target Cross-Reference for Pre-Orders

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Submit pre-order transaction		Accessibility of interface	POP-2-1-1
Submit pre-order transaction	Send address request using BTN (AN)	Presence of functionality	POP-2-2-2, POP-2-7-1
Submit pre-order transaction	Send address validation request using WTN	Presence of functionality	POP-2-2-2, POP-2-7-1
Submit pre-order transaction	Send address validation request using address	Presence of functionality	POP-2-2-2, POP-2-7-1
Submit pre-order transaction	Verify receipt of response	Presence of response	POP-2-2-1, POP-2-3-1
Submit pre-order transaction	Receive "match" response	Timeliness of response	POP-2-5-1
Submit pre-order transaction	Receive "match" response	Accuracy and completeness of response	POP-2-6-1, POP-2-8-1
Submit pre-order transaction	Receive "near match" response	Timeliness of response	POP-2-5-1
Submit pre-order transaction	Receive "near match" response	Accuracy and completeness of response	POP-2-6-1, POP-2-8-1
Submit pre-order transaction	Receive error response	Timeliness of response	POP-2-5-2
Submit pre-order transaction	Receive error response	Accuracy of response	POP-2-6-1, POP-2-8-1
Submit pre-order transaction	Receive error response	Clarity and completeness of error message	POP-2-6-2, POP-2-8-2
Submit pre-order transaction	Send CSR request using BTN (AN)	Presence of functionality	POP-2-2-2, POP-2-7-1
Submit pre-order transaction	Send CSR request using WTN	Presence of functionality	POP-2-2-2, POP-2-7-1
Submit pre-order transaction	Verify receipt of response	Presence of response	POP-2-2-1, POP-2-3-1
Submit pre-order transaction	Receive "match" response	Timeliness of response	POP-2-5-1
Submit pre-order transaction	Receive "match" response	Accuracy and completeness of response	POP-2-6-1, POP-2-8-1
Submit pre-order transaction	Receive error response	Timeliness of response	POP-2-5-2
Submit pre-order transaction	Receive error response	Accuracy of response	POP-2-6-2, POP-2-8-2

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Submit pre-order transaction	Receive error response	Clarity and completeness of error message	POP-2-6-2, POP-2-8-2
Submit pre-order transaction	Send TN request for a specific number(s)	Presence of functionality	POP-2-2-2, POP-2-7-1
Submit pre-order transaction	Send TN request for a random number(s)	Presence of functionality	POP-2-2-2, POP-2-7-1
Submit pre-order transaction	Send TN request for a range of specific numbers	Presence of functionality	POP-2-2-2, POP-2-7-1
Submit pre-order transaction	Verify receipt of response	Presence of response	POP-2-2-1, POP-2-3-1
Submit pre-order transaction	Receive available numbers response	Timeliness of response	POP-2-5-1
Submit pre-order transaction	Receive available numbers response	Accuracy and completeness of response	POP-2-6-1, POP-2-8-1
Submit pre-order transaction	Receive error response	Timeliness of response	POP-2-5-2
Submit pre-order transaction	Receive error response	Accuracy of response	POP-2-6-1, POP-2-8-1
Submit pre-order transaction	Receive error response	Clarity and completeness of error message	POP-2-6-2, POP-2-8-1
Submit pre-order transaction	Send reservation request for a specific TN	Presence of functionality	POP-2-2-2, POP-2-7-1
Submit pre-order transaction	Send reservation request for a single TN	Presence of functionality	POP-2-2-2, POP-2-7-1
Submit pre-order transaction	Send reservation request for multiple TNs	Presence of functionality	POP-2-2-2, POP-2-7-1
Submit pre-order transaction	Verify receipt of response	Presence of response	POP-2-2-1, POP-2-3-1
Submit pre-order transaction	Receive confirmation response	Timeliness of response	POP-2-5-1
Submit pre-order transaction	Receive confirmation response	Accuracy and completeness of response	POP-2-6-1, POP-2-8-1
Submit pre-order transaction	Receive error response	Timeliness of response	POP-2-5-2
Submit pre-order transaction	Receive error response	Accuracy of response	POP-2-6-2, POP-2-8-2
Submit pre-order transaction	Receive error response	Clarity and completeness of error message	POP-2-6-2, POP-2-8-2
Submit pre-order transaction	Send cancel or exchange reservation for a single TN	Presence of functionality	POP-2-2-2, POP-2-7-1

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Submit pre-order transaction	Send cancel or exchange for multiple TNs	Presence of functionality	POP-2-2-2, POP-2-7-1
Submit pre-order transaction	Verify receipt of response	Presence of response	POP-2-2-1, POP-2-3-1
Submit pre-order transaction	Receive confirmation response	Timeliness of response	POP-2-5-1
Submit pre-order transaction	Receive confirmation response	Accuracy and completeness of response	POP-2-6-1, POP-2-8-1
Submit pre-order transaction	Receive error response	Timeliness of response	POP-2-5-2
Submit pre-order transaction	Receive error response	Accuracy of response	POP-2-6-2, POP-2-8-2
Submit pre-order transaction	Receive error response	Clarity and completeness of error message	POP-2-6-2, POP-2-8-2
Request available DID number block(s)	See sub-processes identified for "Request Available Telephone Number(s)" listed above		POP-2-2-1, POP-2-2-2, POP-2-6-1, POP-2-6-2, POP-2-5-1, POP-2-5-2, POP-2-7-1, POP-2-8-1, POP-2-8-2
Reserve DID number block(s)	See sub-processes identified for "Reserve TN(s)" listed above		POP-2-2-1, POP-2-2-2, POP-2-6-1, POP-2-6-2, POP-2-5-1, POP-2-5-2, POP-2-7-1, POP-2-8-1, POP-2-8-2
Cancel DID number block reservation	See sub-processes identified for "cancel TN reservation" listed above		POP-2-2-1, POP-2-2-2, POP-2-6-1, POP-2-6-2, POP-2-5-1, POP-2-5-2, POP-2-7-1, POP-2-8-1, POP-2-8-2
Cancel DID number block reservation	Send service availability request	Presence of functionality	POP-2-2-2, POP-2-7-1
Cancel DID number block reservation	Determine PIC/LPIC availability	Presence of functionality	POP-2-2-2, POP-2-7-1
Cancel DID number block reservation	Verify receipt of response	Presence of response	POP-2-2-1, POP-2-3-1
Cancel DID number block reservation	Receive availability response	Timeliness of response	POP-2-5-1

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Cancel DID number block reservation	Receive availability response	Accuracy of response	POP-2-6-1, POP-2-8-1
Cancel DID number block reservation	Receive availability response	Consistency with retail capability	POP-2-2-2, POP-2-7-1
Cancel DID number block reservation	Receive error response	Timeliness of response	POP-2-5-2
Cancel DID number block reservation	Receive error response	Accuracy of response	POP-2-6-2, POP-2-8-2
Cancel DID number block reservation	Receive error response	Clarity and completeness of error message	POP-2-6-2, POP-2-8-2
Cancel DID number block reservation	Send loop qualification inquiry	Presence of functionality	POP-2-2-2, POP-2-7-1
Cancel DID number block reservation	Verify receipt of response	Presence of response	POP-2-2-1, POP-2-3-1
Cancel DID number block reservation	Receive loop qualification response	Timeliness of response	POP-2-5-1
Cancel DID number block reservation	Receive loop qualification response	Accuracy and completeness of response	POP-2-4-1
Cancel DID number block reservation	Receive loop qualification response	Consistency with retail capability	POP-2-2-2, POP-2-7-1
Cancel DID number block reservation	Receive error response	Timelines of response	POP-2-5-2
Cancel DID number block reservation	Receive error response	Accuracy of response	POP-2-6-1, POP-2-8-1
Cancel DID number block reservation	Receive error response	Clarity and completeness of error message	POP-2-6-2, POP-2-8-2
Cancel DID number block reservation	Send xDSL loop qualification inquiry	Presence of functionality	POP-2-2-2, POP-2-7-1
Cancel DID number block reservation	Verify receipt of response	Presence of response	POP-2-2-1, POP-2-3-1
Cancel DID number block reservation	Receive xDSL loop qualification response	Timeliness of response	POP-2-5-1
Cancel DID number block reservation	Receive xDSL loop qualification response	Accuracy and completeness of response	POP-2-6-1, POP-2-8-1
Cancel DID number block reservation	Receive xDSL loop qualification response	Consistency with retail capability	POP-2-2-2, POP-2-7-1
Cancel DID number block reservation	Receive error response	Timeliness of response	POP-2-5-2

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Cancel DID number block reservation	Receive error response	Accuracy of response	POP-2-6-1, POP-2-8-1
Cancel DID number block reservation	Receive error response	Clarity and completeness of error message	POP-2-6-2, POP-2-8-2
Request access billing customer service record	Send CCSR request using BAN	Presence of functionality	POP-2-2-2, POP-2-7-1
Request access billing customer service record	Send CCSR request using TN	Presence of functionality	POP-2-2-2, POP-2-7-1
Request access billing customer service record	Send CCSR request for the Service and Feature section	Presence of functionality	POP-2-2-2, POP-2-7-1
Request access billing customer service record	Send CCSR request for the Account Summary section	Presence of functionality	POP-2-2-2, POP-2-7-1
Request access billing customer service record	Send CCSR request for the Account ID section	Presence of functionality	POP-2-2-2, POP-2-7-1
Request access billing customer service record	Send CCSR request for the Remarks section	Presence of functionality	POP-2-2-2, POP-2-7-1
Request access billing customer service record	Verify receipt of response	Presence of response	POP-2-2-1, POP-2-3-1
Request access billing customer service record	Receive “match” response	Timeliness of response	POP-2-5-1
Request access billing customer service record	Receive “match” response	Accuracy and completeness of response	POP-2-6-1, POP-2-8-1
Request access billing customer service record	Receive error response	Timeliness of response	POP-2-5-2
Request access billing customer service record	Receive error response	Accuracy of response	POP-2-6-2, POP-2-8-2
Request access billing customer service record	Receive error response	Clarity and completeness of error message	POP-2-6-2, POP-2-8-2

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Request access billing customer service record	Send installation status request	Presence of functionality	POP-2-2-2, POP-2-7-1
Request access billing customer service record	Verify receipt of response	Presence of response	POP-2-2-1, POP-2-3-1
Request access billing customer service record	Receive installation status response	Timeliness of response	POP-2-5-1
Request access billing customer service record	Receive installation status response	Accuracy and completeness of response	POP-2-6-1, POP-2-8-1
Request access billing customer service record	Receive installation status response	Consistency with retail capability	POP-2-2-2, POP-2-7-1
Request access billing customer service record	Receive error response	Timeliness of response	POP-2-5-2
Request access billing customer service record	Receive error response	Accuracy of response	POP-2-6-2, POP-2-8-2
Request access billing customer service record	Receive error response	Clarity and completeness of error message	POP-2-6-2, POP-2-8-2
Request access billing customer service record	Send service order from SOP request	Presence of functionality	POP-2-2-2, POP-2-7-1
Request access billing customer service record	Verify receipt of response	Presence of response	POP-2-2-1, POP-2-3-1
Request access billing customer service record	Receive service order from SOP response	Timeliness of response	POP-2-5-1
Request access billing customer service record	Receive service order from SOP response	Accuracy and completeness of response	POP-2-6-1, POP-2-8-1
Request access billing customer service record	Receive service order from SOP response	Consistency with retail capability	POP-2-2-2, POP-2-7-1

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Request access billing customer service record	Receive error response	Timeliness of response	POP-2-5-2
Request access billing customer service record	Receive error response	Accuracy of response	POP-2-6-2, POP-2-8-2
Request access billing customer service record	Receive error response	Clarity and completeness of error message	POP-2-6-2, POP-2-8-2
Request access billing customer service record	Send directory listing inquiry	Presence of functionality	POP-2-2-2, POP-2-7-1
Request access billing customer service record	Verify receipt of response	Presence of response	POP-2-2-1, POP-2-3-1
Request access billing customer service record	Receive directory listing response	Timeliness of response	POP-2-5-1
Request access billing customer service record	Receive directory listing response	Accuracy and completeness of response	POP-2-6-1, POP-2-8-1
Request access billing customer service record	Receive error response	Timeliness of response	POP-2-5-2
Request access billing customer service record	Receive error response	Accuracy of response	POP-2-6-2, POP-2-8-2
Request access billing customer service record	Receive error response	Clarity and completeness of error message	POP-2-6-2, POP-2-8-2
Request access billing customer service record	Send Scheduling and Availability inquiry	Presence of functionality	POP-2-2-2, POP-2-7-1
Request access billing customer service record	Verify receipt of response	Presence of response	POP-2-2-1, POP-2-3-1
Request access billing customer service record	Receive Scheduling and Availability response	Timeliness of response	POP-2-5-1
Request access billing customer service record	Receive Scheduling and Availability response	Accuracy and completeness of response	POP-2-6-1, POP-2-8-1

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Request access billing customer service record	Receive error response	Timeliness of response	POP-2-5-2
Request access billing customer service record	Receive error response	Accuracy of response	POP-2-6-2, POP-2-8-2
Request access billing customer service record	Receive error response	Clarity and completeness of error message	POP-2-6-2, POP-2-8-2
Request access billing customer service record	Send reservation maintenance inquiry	Presence of functionality	POP-2-2-2, POP-2-7-1
Request access billing customer service record	Verify receipt of response	Presence of response	POP-2-2-1, POP-2-3-1
Request access billing customer service record	Receive reservation maintenance response	Timeliness of response	POP-2-5-1
Request access billing customer service record	Receive reservation maintenance response	Accuracy and completeness of response	POP-2-6-1, POP-2-8-1
Request access billing customer service record	Receive error response	Timeliness of response	POP-2-5-2
Request access billing customer service record	Receive error response	Accuracy of response	POP-2-6-2, POP-2-8-2
Request access billing customer service record	Receive error response	Clarity and completeness of error message	POP-2-6-2, POP-2-8-2
Request access billing customer service record	Send maintenance modification inquiry	Presence of functionality	POP-2-2-2, POP-2-7-1
Request access billing customer service record	Verify receipt of response	Presence of response	POP-2-2-1, POP-2-3-1
Request access billing customer service record	Receive maintenance modification response	Timeliness of response	POP-2-5-1
Request access billing customer service record	Receive maintenance modification response	Accuracy and completeness of response	POP-2-6-1, POP-2-8-1

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Request access billing customer service record	Receive error response	Timeliness of response	POP-2-5-2
Request access billing customer service record	Receive error response	Accuracy of response	POP-2-6-2, POP-2-8-2
Request access billing customer service record	Receive error response	Clarity and completeness of error message	POP-2-6-2, POP-2-8-2
Follow up on delayed pre-order activities	Contact pre-ordering work center help desk	Timeliness of answer Availability of support	POP-5-6, POP-5-8
Follow up on delayed pre-order activities	Request status of response	Timeliness of response	POP-5-8
Follow up on delayed pre-order activities	Request status of response	Accuracy and completeness of response	POP-5-7
Follow up on delayed pre-order activities	Escalate request for information	Accuracy and completeness of procedures	POP-5-14
Follow up on delayed pre-order activities	Escalate request for information	Compliance to procedures	POP-5-14
Request pre-order transaction population support	Contact appropriate work center or help desk	Timeliness of answer	POP-5-6
Request pre-order transaction population support	Contact appropriate work center or help desk	Availability of support	POP-5-3, POP-5-6
Request pre-order transaction population support	Ask question	Timeliness of response	POP-5-8
Request pre-order transaction population support	Ask question	Accuracy and completeness of response	POP-5-7
Request pre-order error correction support	Contact appropriate work center or help desk	Timeliness of answer	POP-5-6
Request pre-order error correction support	Contact appropriate work center or help desk	Availability of support	POP-5-3, POP-5-6

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Request pre-order error correction support	Ask question	Timeliness of response	POP-5-8
Request pre-order error correction support	Ask question	Accuracy and completeness of response	POP-5-7

Table 2-15: Test Target Cross-Reference for Orders

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Submit order		Accessibility of interface	POP-2-1-1
Submit order	Send order transaction	Presence of functionality	POP-2-2-3, POP-2-7-2
Submit order	Send expedited order transaction	Presence of functionality	POP-2-2-3, POP-2-7-2
Submit order	Verify receipt of response	Presence of response	POP-2-2-1, POP-2-3-1
Submit order	Receive confirmation of request (LSC)	Timeliness of response	POP-2-4-1, POP-2-4-2, POP-2-5-3
Submit order	Receive confirmation of request (LSC)	Accuracy and completeness of response	POP-2-6-3, POP-2-8-3
Submit order	Receive error/reject notification	Timeliness of response[49]	N/A
Submit order	Receive error/reject notification	Accuracy of response	POP-2-6-5, POP-2-8-5
Submit order	Receive error/reject notification	Clarity and completeness of error message	POP-2-6-5, POP-2-8-5
Submit order	Receive acceptance of expedited due date	Timeliness of response	POP-2-4-1, POP-2-5-3
Submit order	Receive acceptance of expedited due date	Accuracy and completeness of response	POP-1-6-3
Submit order	Receive rejection of expedited due date request	Timeliness of response	N/A
Submit order	Receive rejection of expedited due date request	Accuracy and completeness of response	POP-2-6-5, POP-2-8-5
Submit order	Send supplement	Presence of functionality	POP-2-2-3, POP-2-7-2
Submit order	Verify receipt of response	Presence of response	POP-2-2-2, POP-2-3-2
Submit order	Receive confirmation of supplement	Timeliness of response	POP-2-4-1, POP-2-4-2, POP-2-5-3

[49] The SEM response does not contain a timestamp indicating when BA-MA delivered the response.

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Submit order	Receive confirmation of supplement	Accuracy of response	POP-2-6-3, POP-2-8-3
Submit order	Receive error/reject notification	Timeliness of response	N/A
Submit order	Receive error/reject notification	Accuracy of response	POP-2-6-5, POP-2-8-5
Submit order	Receive error/reject notification	Clarity and completeness of error message	POP-2-6-5, POP-2-8-5
View completed order information	Inquire on completed order	Presence of functionality	POP-2-2-2, POP-2-7-1
View completed order information	Inquire on completed order	Consistency with retail capability	POP-2-2-2, POP-2-7-1
Follow up on delayed order activities	Contact ordering work center help desk	Timeliness of answer	POP-5-6
Follow up on delayed order activities	Contact ordering work center help desk	Availability of support	POP-5-3
Follow up on delayed order activities	Request status of response	Timeliness of response	POP-5-6
Follow up on delayed order activities	Request status of response	Accuracy and completeness of response	POP-5-7
Follow up on delayed order activities	Escalate request for information	Accuracy and completeness of procedures	POP-5-14
Follow up on delayed order activities	Escalate request for information	Compliance to procedures	POP-5-14
Follow up on delayed order activities	Monitor closure of request	Completeness and accuracy of follow-up	POP-5-9
Follow up on delayed order activities	Monitor closure of request	Timeliness of answer	POP-5-8
Request order population support	Contact appropriate work center or help desk	Availability of support	POP-5-3, POP-5-6

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Request order population support	Ask question	Timeliness of response	POP-5-8
Request order population support	Ask question	Accuracy and completeness of response	POP-5-7
Request order error correction support	Contact appropriate work center or help desk	Timeliness of answer	POP-5-6
Request order error correction support	Contact appropriate work center or help desk	Availability of support	POP-5-3, POP-5-6
Request order error correction support	Ask question	Timeliness of response	POP-5-8
Request order error correction support	Ask question	Accuracy and completeness of response	POP-5-7
Receive Provisioning completion notification	Receive Provisioning completion notification transaction	Timeliness of response	POP-2-4-3
Receive Provisioning completion notification	Receive Provisioning completion notification transaction	Timeliness of dates	POP-7-1-1
Receive Provisioning completion notification	Receive Provisioning completion notification transaction	Accuracy of data	POP-2-6-6, POP-2-6-7, POP-2-8-6, POP-2-8-7
Receive Provisioning completion notification	Match response to order transaction and confirmation	Accuracy of provisioning	POP-7-1-1, POP-7-1-2, POP-7-1-3
Receive Provisioning completion notification	Verify receipt of completion notification	Completion notification received for all transactions	POP-2-4-3
Receive jeopardy notification[50]	Receive jeopardy notification	Timeliness of notification	N/A
Receive jeopardy notification	Receive jeopardy notification	Timeliness of dates	N/A
Receive jeopardy notification	Receive jeopardy notification	Accuracy of data	N/A

[50] BA-MA plans to implement an electronic Jeopardy Notification process in August for "Non-Dispatch" orders and in October for "Dispatch" orders (See Bell Atlantic Change Request #1601).

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Receive jeopardy notification	Receive jeopardy notification	Frequency of notification	N/A
Receive jeopardy notification	Identify reason for jeopardy	Accuracy of response	N/A
Receive Billing completion notification	Receive Billing completion notification transaction	Timeliness of response[51]	N/A
Receive Billing completion notification	Receive Billing completion notification transaction	Timeliness of dates	BLG-6-4-9
Receive Billing completion notification	Receive Billing completion notification transaction	Accuracy of data	POP-2-6-7, POP-2-8-7 and BLG-6-4-9

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table 2-16: Data Sources for GUI Functional Evaluation and Volume Performance Test

Document	File Name	Location in Work Papers	Source
Bell Atlantic-North Order Business Rules LSOG 2 Versions 1.7, 1.8.1, and 1.10.1	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Pre-Order Business Rules Version LSOG 3 Versions 2.5.1, 2.6.1, 2.7.1, and 2.8.1	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Order Business Rules Version LSOG 4 Versions 4.1.1 and 4.3.1	Hard Copy	Engagement File Work Papers	Bell Atlantic

[51] The BCN response does not contain a timestamp indicating when BA-MA delivered the response.

Document	File Name	Location in Work Papers	Source
Bell Atlantic Pre-Order Business Rules LSOG 4 Versions 4.1.1 and 4.3.1	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic CLEC Handbook Series, Volume I (March 1999 and March 2000 versions)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic CLEC/ Resale Handbook Series Volume II (September 1999 and March 2000 versions)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic CLEC Handbook Series, Volume III (March 1999 and March 2000 versions)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Resale Handbook Series, Volume I (September 1999)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Resale Handbook Series, Volume III (September 1999)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Local Services Common Web GUI User Guide Version 3.3 (October 1999) and Version 3.4 (January 2000)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Direct Carrier Access System (DCAS) User Guide for Unbundled Network Elements (UNEs) (As supplied during Bell Atlantic training in October 1999)	Hard Copy	Engagement File Work Papers	Bell Atlantic

Document	File Name	Location in Work Papers	Source
Bell Atlantic Telecom Industry Service Resale Training Non-Complex Products and Services Student Guide (As supplied during Bell Atlantic training in October 1999)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Telecom Industry Service Resale Training Complex Products and Services Student Guide (As supplied during Bell Atlantic training in October 1999)	Hard Copy	Engagement File Work Papers	Bell Atlantic
MA USOC Codes (FTP January 11, 2000)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Access Service Request (ASR) Business Rules Versions 21 and 21.3	Hard Copy	Engagement File Work Papers	Bell Atlantic
Resale Volume III 3.4 Date Due Provisioning Processes/Intervals	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Pre-Order, Order and Trouble Administration Error Messages, February 2000	Hard Copy	Engagement File Work Papers	Bell Atlantic
Intervals for Unbundled Network Elements	UNEInterval.xls	POP-2-A-1	Bell Atlantic
Resale Intervals	ResaleInterval.xls	POP-2-A-2	Bell Atlantic

Document	File Name	Location in Work Papers	Source
Initial State Customer Service Records (CSRs)	StartCSR.mdb	POP-2-B-1	KPMG Consulting
Post-Activity Customer Service Records (CSRs)	PostCSR.mdb	POP-2-C-1	KPMG Consulting
POP Test Bed Specifications	POPtestbedspecs.xls	POP-2-D-1	KPMG Consulting
Test Case Master	MALSOG2testcase.xls	POP-2-D-2	KPMG Consulting
Transaction Submission Schedule	MALSOG2sched.xls	POP-2-D-3	KPMG Consulting
Facilities Management Tracking Log	MALSOG2facil.xls	POP-2-D-4	KPMG Consulting
Pre-Order/Order Integration Log	MAIntegration.xls	POP-2-D-5	KPMG Consulting
GUI Downtime Log (Compilation of BA-MA Change Control Notices)	MAGUIDown.xls	POP-2-D-6	KPMG Consulting
Expected Results Analysis Log	MAGUIExpected.xls	POP-2-D-7	KPMG Consulting
Actual monthly pre-order and order transaction quantities	MAVoltransqty.xls	POP-1-E-1	Bell Atlantic
Actual time of day distribution of pre-orders and orders	MAVoldistrib.xls	POP-1-E-1	Bell Atlantic
Forecasted order levels	MAVolOrderfrcst.xls	POP-1-E-1	Bell Atlantic

Document	File Name	Location in Work Papers	Source
Actual monthly pre-order and order transaction quantities	MAVoltransqtyCLEC.xls	POP-1-E-1	CLECs
Forecasted order levels	MAVolOrderfrcstCLEC.xls	POP-1-E-1	CLECs

2.4.1 Data Generation/Volumes

KPMG Consulting determined appropriate transaction levels for Functional testing by analyzing the available pre-order types and flowthrough eligible order delivery methods and activity types.

The number of transactions submitted for Normal volume testing was determined using forecast information obtained from BA-MA and CLECs as an input. KPMG Consulting projected Normal volumes for pre-order and order transactions in October 2000.

The Peak test was designed to replicate a level of activity that BA-MA experiences during peak periods. The BA-MA order data was analyzed for Peak days over the first quarter of 2000, and the five days with the highest total order level were compared to the average level over the same period. This data was found to support a peak level activity of 125% of a Normal day.

In the Stress test, the BA-MA systems were tested at volume levels between 150% and 200% of baseline level activities.

2.5 Evaluation Methods

The *Master Test Plan* defined a range of pre-order and order scenarios to be tested in POP2. The scenarios outline, at a high level, the specific products and services to be ordered and activity types to be requested. Using these test scenario descriptions, KPMG Consulting developed test cases for each scenario. The test cases contain a more detailed description of the order to be executed, defining, for example, customer types (business and residential), migration activity (partial and full migration[52]), and flowthrough designations.

Each test case was then used to generate distinct pre-order and order transactions. BA-MA provided "test bed accounts" against which pre-order and order transactions could be placed. The pre-order and order transaction scenarios and test cases represented a range of service families (e.g., POTS, ISDN, and Centrex) executed against a variety of service delivery methods (Resale, UNE, and UNE-P) and activity types (e.g., New, Change, Disconnect, Move).

[52] A full migration converts all of a customer's lines to a new service provider. A partial migration retains at least one-line with BA-MA and converts some lines to a CLEC.

2.5.1 Functional Evaluation

Transaction responses were evaluated for consistency with the pre-order and order business process flow, as described in Section 2.1. In addition, KPMG Consulting evaluated transactions to determine if they "flowed-through" BA-MA interfaces without human intervention. For both sets of test activities, KPMG Consulting evaluated the timeliness, accuracy, clarity, and completeness of responses.

To prepare pre-order and order transactions, KPMG Consulting used the BA-MA business rules and GUI User Guide. The business rules detail the form and field information needed to submit valid pre-order inquiries and order requests. The GUI User Guide provides an overview of creating and monitoring responses for pre-order inquiries and service order requests via the GUI.

KPMG Consulting submitted stand-alone pre-orders and orders to evaluate BA-MA system functionality. Pre-orders were also submitted to obtain information necessary to validate customer information or to provide input for a subsequent order.

KPMG Consulting monitored the progress and status of submitted pre-orders and orders through transaction completion. Transactions receiving errors were researched (either internally or with the BA-MA Help Desk), corrected, and re-submitted as appropriate. GUI information (e.g., date, timestamp) pertaining to the submissions and response postings were captured by KPMG Consulting, where possible.[53] KPMG Consulting also investigated missing, late, and/or incorrect responses.

2.5.2 Volume Performance Test

For the Volume Performance Test, KPMG Consulting submitted a mix of pre-order and order transactions over a four day schedule. Transactions were analyzed for trends relative to time of day, service delivery method, and product family. KPMG Consulting collected and evaluated the time stamps associated with all outgoing GUI pre-order and order submissions, as well as the time stamps associated with incoming GUI responses. In addition, KPMG Consulting evaluated transactions to determine if they "flowed-through" BA-MA interfaces without human intervention.

The Volume Performance Test differed from the GUI Functional Test in two ways:

1. Orders were sent using training mode to allow multiple orders for the same account to be sent without exhausting the test bed; and
2. Orders chosen were flowthrough eligible.

[53] BA-MA provides timestamps for all responses except LSOG 2 error messages and Billing Completion Notices.

The Volume Performance Test was conducted in three phases:

1. A Normal volume test using projected transaction volume levels for October, 2000, run over two 24-hour periods.[54]

2. A Peak test using volumes at 125% of the normal volume test, run over one 24-hour period. In this test, a number of transactions were purposely submitted with error conditions.

3. A Stress test using volumes at 150% of the normal volume test, gradually increasing to 200%, run over one four-hour period.

The pre-order and order transaction volumes calculated for Normal day testing were developed using information provided by Bell Atlantic-MA and the CLEC community. Peak day and Stress day volumes were derived from Bell Atlantic-North volume history for Bell Atlantic-North.

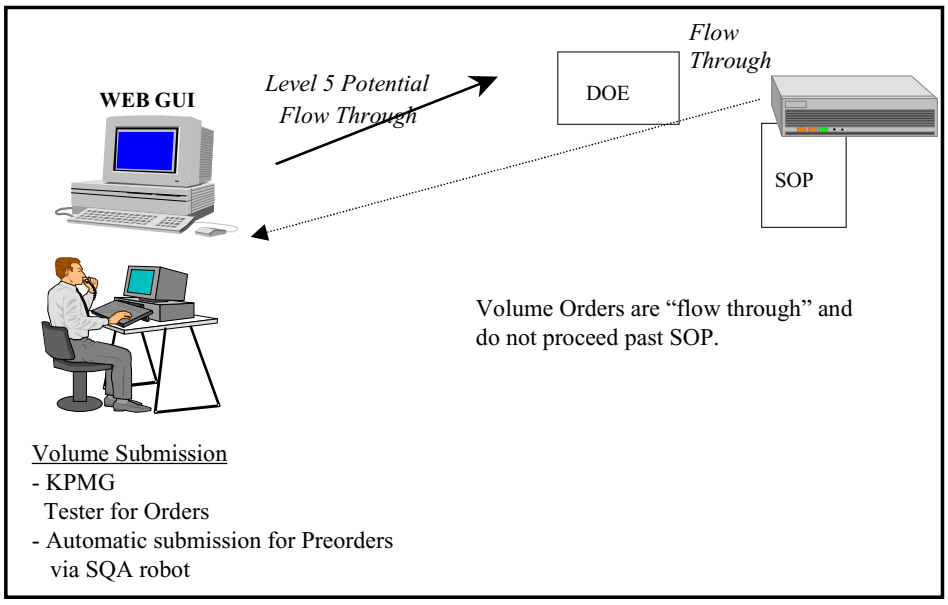
All three Volume Tests (Normal, Peak and Stress) used the same set of test cases, with one exception. For the Peak Test, a number of pre-order and order transactions were submitted with error conditions to test how BA-MA's systems handled such transactions under Volume Test conditions.

For each volume day, the planned pre-order and order transactions were distributed throughout the testing window based on BA-MA's reported hourly distribution. Once the distribution was determined, each transaction was then assigned an interface (EDI, GUI) through which it was to be submitted. 96% were submitted through EDI and 4% through the GUI. GUI and EDI transactions were submitted concurrently during the Volume tests. The orders and pre-orders were distributed over the test scenarios described in Section 2.2.

As pre-order and order volume transactions were submitted, positive confirmations or error messages were posted and recorded. A transaction was deemed complete if one of the following was received: positive pre-order response, a LSC, or an error message. The chart below provides an overview of the Volume Performance Test process:

[54] Some transactions executed in the 24-hour test were submitted during BA-MA's Service Order Processor scheduled downtime: 12AM to 7AM on non-holiday weekdays.

Figure 2-2: GUI Volume Test Process



2.6 Analysis Methods

The GUI Functional Evaluation and Volume Performance Test included a checklist of evaluation criteria developed by KPMG Consulting during the initial phase of the Bell Atlantic-Massachusetts OSS Evaluation. These evaluation criteria, detailed in the *Master Test Plan*, provided the framework of norms, standards, and guidelines for the GUI Functional Evaluation and Volume Performance Test.

The data collected were analyzed employing the evaluation criteria referenced above.

KPMG Consulting assigned results to evaluation criteria based on standards defined in the New York State Carrier-to-Carrier Guidelines (C2C): Performance Standards and Reports.[55] For those evaluation criteria that do not map to the C2C metrics or map to metrics for which no standard was available, KPMG Consulting has applied its own guideline, based on professional judgement.

3.0 Results Summary – LSOG 2

This section identifies the evaluation criteria and test results.

[55] In a letter dated January 14, 2000, the MA Department of Telecommunications and Energy (DTE) directed KPMG Consulting to use the New York Carrier-to-Carrier Guidelines as the basis for evaluations outlined in the MA *Master Test Plan*. The February 28, 2000 Carrier-to-Carrier Guidelines are the most recent version available at the time of this report writing.

3.1 Results & Analysis

The results of the GUI Functional Evaluation of LSOG 2 transactions are presented in the table below.

Table 2-17: POP2 Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
	Interface Availability:		
POP-2-1-1	GUI pre-order and order capability is consistently available during scheduled hours of operation.[56]	Satisfied	During the course of this test, KPMG Consulting monitored instances of GUI downtime as reported by BA-MA Change Control notices.[57] Based on information derived from these downtime notices, KPMG Consulting observed that the BA-MA GUI was available during 99.85% of scheduled hours of availability.[58] The frequency and duration of GUI downtime did not significantly impact KPMG Consulting's ability to conduct routine pre-order and order business operations.
	Presence of Functionality – Functional Evaluation:		
POP-2-2-1	BA-MA system or representative provides responses to all transactions.	Satisfied	Of the 155 pre-order transactions submitted during the Functional Evaluation, 100% received responses (pre-order error messages or valid responses) from BA-MA. Of the 169 order transactions submitted during the Functional Evaluation, 99.4% received responses (error message or confirmation) from BA-MA.

[56] Scheduled hours of "Prime Time" availability are defined as 6AM – 12 midnight Monday through Saturday, excluding holidays. Scheduled hours of "Non-Prime Time" are defined as 12:01 – 5:59 AM Monday though Saturday, plus Sundays and holidays.

[57] KPMG Consulting reviewed BA-MA Change Control notices concerning total interface downtime (and not specific back-end system downtimes) to calculate interface availability results.

[58] The GUI was available during 99.81% of scheduled Prime Time availability and 100% of scheduled Non Prime Time availability.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-2-2-2	BA-MA system or representative provides required pre-order functionality.	Satisfied	BA-MA systems and representatives provided appropriate functionality to process all of the pre-order transaction types evaluated during the course of this test (see Table 2-1).
POP-2-2-3	BA-MA system or representative provides required order transaction functionality.	Satisfied	BA-MA systems and representatives provided appropriate functionality to process all of the order transaction types evaluated during the course of this test (See Tables 2-2 through 2-5).
	Presence of Functionality – Volume Performance Test:		
POP-2-3-1	BA-MA system or representative provides responses to all transactions.	Satisfied	Of the 2,061 pre-order transactions sent during the Volume Test, 99.8% received responses. Of the 600 order transactions sent during the Volume Test, 100% received responses.
	Timeliness of Response – Functional Evaluation:		
POP-2-4-1	BA-MA system or representative provides timely Local Service Confirmations (LSCs) in response to Flow-Through (FT) LSRs.	Satisfied	The standard for LSC response timeliness defined in the C2C Guidelines for FT orders is 95% received within two hours. Based on Functional Evaluation data, 100% of FT LSCs were returned within 2 hours.[59] See Table 2-19 for additional detail on FT LSC timeliness.

[59] KPMG Consulting utilized timestamp information delivered by BA-MA in the LSC response to calculate LSC Timeliness.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-2-4-2	BA-MA system or representative provides timely Local Service Confirmations (LSCs) in response to Non-Flow-Through (NFT) LSRs.	Satisfied	The standard for LSC response timeliness defined in the C2C Guidelines for NFT orders for < 10 lines is 95% received within 24 hours. Based on Functional Evaluation data, 98.3% of < 10 line NFT LSCs were returned within 24 hours.[60] The C2C standard for NFT orders >= 10 lines is 72 hours. Based on Functional Evaluation data, 100% of >= 10 line NFT LSCs were returned within 72 hours. See Table 2-19 for additional detail on NFT LSC timeliness.
POP-2-4-3	BA-MA system or representative provides timely Provisioning Completion Notifications (PCNs).	Satisfied	The standard for PCN response timeliness defined in the C2C Guidelines for Resale and UNE (excluding loop conversions) orders is 95% of PCNs orders delivered by noon one business day following work completion.[61] 96.2% of PCNs received were delivered by noon one business day after the PCN CD.[62] An additional 2.5% were delivered within 2 business days.
	Timeliness of Response – Volume Performance Test:		
POP-2-5-1	BA-MA system or representative provides timely pre-order responses.	Satisfied	The standard for pre-order response timeliness defined in the C2C Guidelines is "Parity plus not more than four seconds."[63] Average response time for CSRs, DDAs, and ADRs (both stand-alone address validations and validations combined with a TN reservation) was within the associated C2C standards.

[60] Of the two late LSCs, one was received within two business days, and one within eight business days.
[61] KPMG Consulting derived a service order's work completion date from the Completion Date (CD) data element returned within the PCN response.
[62] Of these, one transaction received a PCN *prior* to the Completion Date (CD) provided within the PCN.
[63] BA-MA pre-order timeliness data (i.e., parity measures) were obtained from BA-MA EnView simulation data for the period May 15 through June 12. KPMG Consulting pre-order timeliness measures were compared to this parity standard in order to derive results.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			Average response time for PSAs exceeded the associated C2C standards. However, 95% of PSAs were received within 10 seconds. See Figure 3 for additional detail on PSA timeliness. BA-MA retail analog data was not available for all pre-order inquiry types. For those pre-orders not evaluated against BA-MA retail data: Average response time for DLRs, and LQBs was within 10 seconds. Average response time for LXRs was 17.7 seconds. See Table 2-20 for additional detail of pre-order response timeliness.
POP-2-5-2	BA-MA system or representative provides timely pre-order error messages.	Satisfied	The standard for pre-order response timeliness defined in the C2C Guidelines is "Parity plus not more than four seconds."[64] Based on BA-MA Retail analog data, this standard equates to 4.06 seconds. Of the 2, 061 transaction sent, only 12 pre-order errors were received. BA-MA delivered these pre-order errors within an average of 6.83 seconds. However, 9 of 12 responses were received within 5 seconds.
POP-2-5-3	BA-MA system or representative provides timely Local Service Confirmations (LSCs) in response to Flow-Through (FT) LSRs.	Satisfied	The standard for LSC response timeliness defined in the C2C Guidelines for Flow-Through Orders is 95% received within two hours. For the Volume Performance test, 100% of FT LSCs were returned within 2 hours.

[64] BA-MA pre-order timeliness data (i.e., parity measures) were obtained from BA-MA Enview simulation data for the period May 15 through June 12. KPMG Consulting pre-order timeliness measures were compared to this parity standard in order to derive results.

Test Cross-Reference	Evaluation Criteria	Result	Comments
	Accuracy of Response:		
POP-2-6-1	BA-MA system or representative provides clear, accurate and complete pre-order responses.	Satisfied	A sample of pre-order responses was examined for clarity, completeness, and accuracy relative to the BA-MA business rules. Pre-order responses were complete with respect to BA-MA Business Rule requirements in most cases. However, the required field, "INQNUM" was consistently missing from pre-order responses. The data was instead returned within the "PON" field.
POP-2-6-2	BA-MA system or representative provides clear, accurate and relevant pre-order error messages.	Satisfied	A sample of pre-order errors was examined for clarity, completeness, and accuracy relative to the BA-MA business rules. Error messages were received in response to invalid pre-order requests and contained remarks (RMK) providing reasonable information to determine the cause of the error. In addition, pre-order error responses were complete with respect to BA-MA Business Rule requirements.
POP-2-6-3	BA-MA system or representative provides clear, accurate and complete Local Service Confirmations (LSCs).	Satisfied	A sample of LSCs was examined for clarity, completeness, and accuracy relative to the BA-MA business rules. BA-MA Local Service Confirmations (LSCs) provided clear, accurate and complete information in accordance with BA-MA Business Rules. All of the fields required by the BA-MA Business Rules were present and the data was populated correctly.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-2-6-4	Provisioning dates identified within BA-MA's order confirmation are consistent with CLEC's valid due date request (e.g., a due date selected in accordance with the product's standards interval or if appropriate, from the "Smarts Clock" application).	Satisfied	For purposes of measuring this evaluation criteria, KPMG Consulting used a standard of 95% of LSC Due Date[65] (DD) = LSR Desired Due Date (LSR DDD).[66] 99% of confirmed DDs identified within LSCs met the requested DDDs.[67]
POP-2-6-5	BA-MA system or representative provides clear, accurate and complete Standard Error Messages (SEMs).	Satisfied	A sample of SEMs was examined for clarity, completeness, and accuracy relative to the BA-MA business rules. SEMs were received in response to LSRs with errors, and contained remarks (RMK) providing reasonable information to determine the cause of the error. The information provided was in accordance with BA-MA Business Rules in most cases. The required field, CLECNAME, was consistently omitted from the SEMs returned. This field was not essential to KPMG Consulting error resolution activities. See POP4 Results for additional information on this issue.
POP-2-6-6	BA-MA system or representative provides accurate and complete Provisioning Completion Notifications (PCNs).	Satisfied	A sample of PCNs was examined for completeness and accuracy relative to the BA-MA business rules. PCNs provided by BA-MA were both accurate and in accordance with BA-MA Business Rules. All of the fields required by the BA-MA Business Rules were present and the data was populated correctly.

[65] LSC Due Date (DD) is defined as the due date provided in the LSC. It is the date on which BA-MA commits to complete provisioning of a customer's service request.
[66] LSR Desired Due Date (LSR DDD) is defined as the due date requested in a customer's LSR.
[67] One LSC was returned with an earlier DD than the requested DDD.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-2-6-7	BA-MA system or representative provides accurate and complete Billing Completion Notifications (BCNs).	Satisfied	A sample of BCNs was examined for completeness and accuracy relative to the BA-MA Business Rules. BCNs provided by BA-MA were both accurate and in accordance with BA-MA Business Rules. All of the fields required by the BA-MA Business Rules were present and the data was populated correctly.

4.0 Results Summary – LSOG 4

This section identifies the evaluation criteria and test results.

4.1 Results & Analysis

The LSOG 4 Evaluation assessed BA-MA's process for handling pre-orders and orders submitted via the GUI interface. This test includes the editing process performed by Request Manager. During this test, KPMG Consulting submitted a mix of stand-alone pre-orders and orders, as well as integrated pre-order and order transaction sets. This test is intended to assess only the functionality of LSOG 4.

The results of the GUI Functional Evaluation of LSOG 4 transactions are presented in the table below.

Table 2-18: POP2 LSOG 4 Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
	Presence of Functionality – Functional Evaluation:		
POP-2-7-1	BA-MA system or representative provides required pre-order functionality.	Satisfied	BA-MA systems and representatives provided appropriate functionality to process all of the pre-order transaction types evaluated during the course of this test (see Table 2-10).
POP-2-7-2	BA-MA system or representative provides required order transaction functionality.	Satisfied	BA-MA systems and representatives provided appropriate functionality to process all of the order transaction types evaluated during the course of this test (see Tables 2-11 through 2-13).

Test Cross-Reference	Evaluation Criteria	Result	Comments
	Accuracy of Response:		
POP-2-8-1	BA-MA system or representative provides clear, accurate and complete pre-order responses.	Satisfied	A sample of pre-order responses was examined for clarity, completeness, and accuracy relative to the BA-MA Business Rules. Pre-order responses were complete with respect to BA-MA Business Rule requirements in all cases.
POP-2-8-2	BA-MA system or representative provides clear, accurate and relevant pre-order error messages.	Satisfied	A sample of pre-order errors was examined for clarity, completeness, and accuracy relative to the BA-MA Business Rules. Error messages were received in response to invalid pre-order requests and contained remarks (RMK) providing reasonable information to determine the cause of the error. In addition, pre-order error responses were complete with respect to BA-MA Business Rule requirements.
POP-2-8-3	BA-MA system or representative provides clear, accurate and complete Local Service Request Local Responses (LSRLRs).	Satisfied	A sample of LSRLRs was examined for clarity, completeness, and accuracy relative to the BA-MA Business Rules. BA-MA Local Service Confirmations (LSRLRs) for Resale and UNE-P orders provided clear, accurate and complete information in accordance with BA-MA Business Rules. On Resale and UNE-P LSRLRs, all of the fields required by the BA-MA Business Rules were present and the data was populated correctly. LSRLRs received for Loop orders failed to include the required field Response Type (RT). This field was not essential for KPMG Consulting ordering activities.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-2-8-4	Provisioning dates identified within BA-MA's order confirmation are consistent with CLEC's valid due date request (e.g., a due date selected in accordance with the product's standards interval or if appropriate, from the "Smarts Clock" application).	Not Complete	KPMG continues to analyze results of due date accuracy.
POP-2-8-5	BA-MA system or representative provides clear, accurate and complete Error Messages (ERRs).	Satisfied	A sample of ERRs was examined for clarity, completeness, and accuracy relative to the BA-MA business rules. ERRs were received in response to LSRs with errors, and contained remarks (RMK) providing reasonable information to determine the cause of the error. The information provided was in accordance with BA-MA Business Rules in most cases. The required field, ERR_CODE, was consistently omitted from the ERRs returned for orders requiring manual BA-MA intervention. This field was not essential to KPMG Consulting error resolution activities. See POP4 Results for additional information on this issue.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-2-8-6	BA-MA system or representative provides accurate and complete Provisioning Completion Messages (PCMs).	Satisfied	A sample of PCMs was examined for completeness and accuracy relative to the BA-MA Business Rules. PCMs provided by BA-MA were both accurate and in accordance with BA-MA Business Rules. All of the fields required by the BA-MA Business Rules were present and the data was populated correctly.
POP-2-8-7	BA-MA system or representative provides accurate and complete Billing Completion Messages (BCMs).	Satisfied	A sample of BCMs was examined for completeness and accuracy relative to the BA-MA Business Rules. BCMs provided by BA-MA were both accurate and in accordance with BA-MA Business Rules in most cases. All of the fields required by the BA-MA Business Rules were present and the data was populated correctly.

Table 2-19: Local Service Confirmation (LSC) Timeliness: LSOG 2 Functional Evaluation

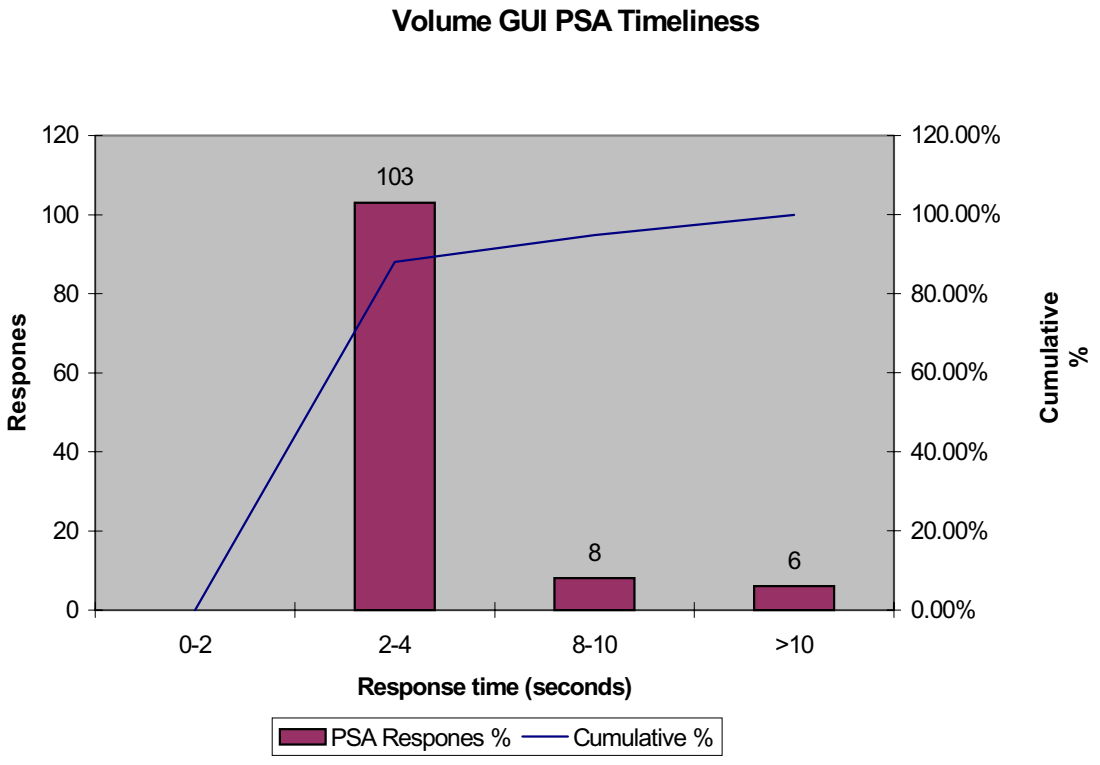
		LSC		
		Flow Through	Non Flow-Through	
			< 10 lines	>= 10 lines
Resale	Total responses	12	15	0
	Total ontime responses	12	15	0
	% Ontime	100.00%	100.00%	
UNE-L	Total responses	9	25	0
	Total ontime responses	9	24	0
	% Ontime	100.00%	96.00%	
UNE-P	Total responses	11	20	0
	Total ontime responses	11	20	0
	% Ontime	100.00%	100.00%	
Other	Total responses	0	0	2
	Total ontime responses	0	0	2
	% Ontime			100.00%
Total	Total responses	32	60	2
	Total ontime responses	32	59	2
	% Ontime	100.00%	98.33%	100.00%

Notes:
1. Other = Interconnection Trunk + Resale Complex

Table 2-20: Pre-Order Response Timeliness: LSOG 2 Volume Evaluation

Query Type	Number of Valid Responses	Time Between Response & Request in Seconds			
		Min	Max	Standard Avg	KPMG Avg
ADR (add)	119	6	23	8.10	7.31
ADR (add/TN)	48	1	10	8.94	5.44
CSRs	1303	3	27		5.20
DDA	197	2	28	4.20	3.80
DLR	106	4	28	N/A	7.10
LQB	88	4	37	N/A	6.97
LXR	83	16	36	N/A	17.71
PSA	117	4	41	4.30	6.45
Count	2061	1	41		5.94

Figure 2-3: Product Service Availability (PSA) Response Timeliness: LSOG 2 Volume Evaluation



C. Test Results: Order Flowthrough Evaluation (POP3)

1.0 Description

The Order "Flowthrough" Evaluation tested the ability of mechanized orders (submitted via electronic data interchange (EDI) or graphical user interface (GUI)) to flow from a CLEC through the Bell Atlantic-Massachusetts (BA-MA) interface into the BA-MA ordering system without manual intervention. Transactions listed in the "Bell Atlantic-North Generic Ordering Flow Through Scenarios," "Bell Atlantic-North USOC In-Scope Table – Platform Products," and "Bell Atlantic-North USOC In-Scope Table – Resale Products" that were identified as flowthrough" were tested.

The Order Flowthrough Evaluation had three components:

1. Achieved Flowthrough Test
2. Commercial Flowthrough Test
3. Flowthrough Parity Test

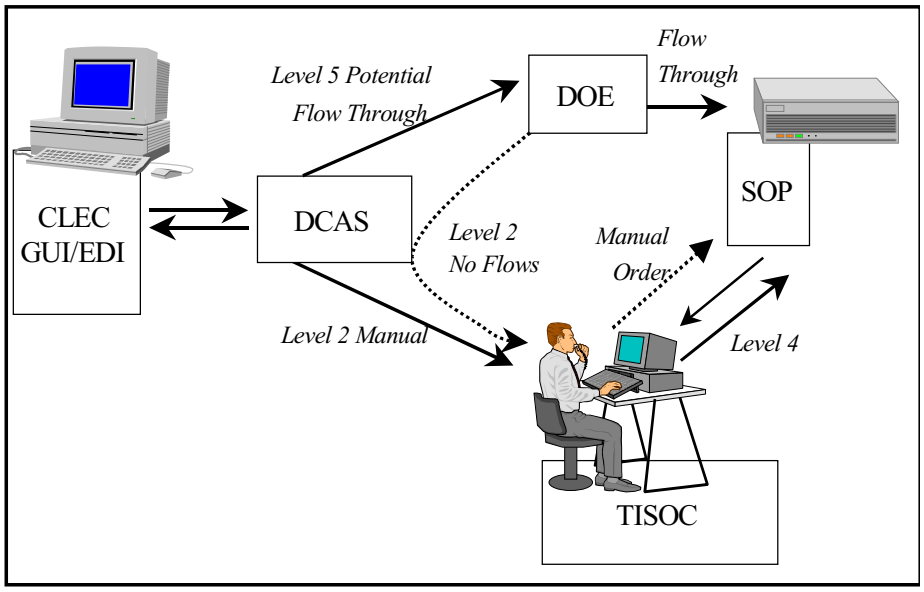
2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

The following diagram illustrates the flow of a mechanized order from CLEC submission through service order generation.

Figure 3-1: Flow of Mechanized Order



CLEC EDI and GUI orders enter BA-MA through the Direct Customer Access System (DCAS). Once an order passes through a series of edits and is determined to be a valid transaction, an algorithm is used to determine flowthrough eligibility (Level 2 or Level 5). A "Level 2" order is sent directly to the Telecom Industry Service Order Center (TISOC) to be manually entered into the Service Order Processor (SOP) system by a BA-MA representative. Level 2 orders do not flowthrough where Level 5 orders do flowthrough. A potential "Level 5" order is sent to Direct Order Entry (DOE) system. DOE performs additional edits. An order that passes the DOE edits flows into the SOP and on to the downstream provisioning systems. An order that does not pass the DOE edits is classified as "No Flow" and is sent back through DCAS to the TISOC for manual entry into the SOP.

BA-MA has an additional category, "Level 4," for orders that do not flowthrough but require a minimal amount of manual handling. A "Level 4" order is a "No Flow" order which falls out to the TISOC for manual handling. However, before the order is sent to the TISOC a shell of the order is established in SOP. While Level 4 transactions require less manual handling than Level 2 transactions, they are not true flowthrough. BA-MA Level 4 transactions include various UNE-Loop (UNE-L) transactions.

2.2 Scenarios

2.2.1 Achieved Flowthrough Scenarios

Based on publicly available BA-North order flowthrough information[68] and correspondence with BA-North personnel,[69] KPMG Consulting determined which scenarios would be tested for BA-MA flowthrough capabilities.

The following table lists the transaction types tested in evaluated Achieved Flowthrough Test.

Table 3-1: Transaction Types tested for Flowthrough

Product	Transaction Type
Resale	Conversion with/without changes — BA-MA retail to reseller and reseller to reseller
Resale	InterLATA Pre-subscription Indicator Code (PIC) modifications including PIC Freeze
Resale	IntraLATA Pre-subscription Indicator Code (LPIC) modifications including LPIC Freeze
Resale	Changes and deletes to Custom Calling Features
Resale	Full disconnects

[68] "Bell Atlantic-North Generic Ordering Flow Through Scenarios" (January 2000);
"Bell Atlantic North USOC In-Scope Table - Platform Products" (March 2000);
"Bell Atlantic North USOC In-Scope Table - Resale Products" (April 2000).

[69] In order to make initial flowthrough assessments for certain test scenarios, KPMG Consulting requested clarification of the available Bell Atlantic flowthrough documentation from Bell Atlantic Change Control and the BA-MA Account Manager assigned to KPMG Consulting.

Product	Transaction Type
Resale	Add Optional Calling Plans
Resale	Convert as specified
Resale	Class of service
Resale	Customer/company initiated blocking
Resale	Delete auxiliary line(s)
Resale	Phonesmart
Resale	New line
Resale	Suspend/ Restore
Resale	Simple directory listing(s)
Resale	Add/Delete Valueflex
Resale	Add/Change/Delete Hunting
Resale	Add/Delete Call Forwarding II
Resale	Add/Delete Ringmate
UNE-P	Migration of existing account “as-is”
UNE-P	Migration of existing account “as specified” with features
UNE-P	PIC modifications including PIC Freeze
UNE-P	LPIC modifications including LPIC Freeze
UNE-P	Customer/company initiated blocking
UNE-P	Delete an auxiliary line
UNE-P	Add/Change/Delete Hunting
UNE-P	Suspend/Restore
UNE-P	Phonesmart
UNE-P	Call Forwarding II
UNE-P	Post migration changes — Simple features
UNE-P	Post migration changes — Blocking
UNE-P	Post migration changes — PIC/LPIC/Freeze PIC
UNE-P	Post migration changes — Delete a line
UNE-P	Post migration — Additional listings/Listing Changes
UNE	New basic link
UNE	Partial migration of existing service without INP
UNE	Partial migration of existing service
UNE	Full migration of existing service

Product	Transaction Type
UNE	Full migration of existing service
UNE	Addition of new link to existing account
UNE	Full migration loop with local number portability (LNP)
UNE	Post migration loop — Delete loops
UNE	Standalone local number portability
UNE	Directory listings with new/migrated loops
UNE	Post migration change directory listings
UNE	Request New Dark fiber
UNE	Number portability

2.2.2 Commercial Flowthrough Scenarios

KPMG Consulting received all orders submitted to Bell Atlantic in New York[70] (NY) and MA from two CLECs over a specified two-week period. Of the total orders received, KPMG Consulting selected and assessed a random sample of various UNE-L and UNE-P scenarios.

2.2.3 Order Flowthrough Parity Scenarios

KPMG Consulting submitted a list of ordering scenarios used during POP1 and POP2 to BA-MA. KPMG Consulting selected the Parity Test scenarios by eliminating certain scenarios used in POP1 and POP2. Specifically, redundant scenarios and scenarios not applicable to the retail environment were eliminated. BA-MA analyzed each scenario and reported on the retail equivalent and flowthrough eligibility of these orders.[71]

Table 3-2: Order Flowthrough Parity Results

Number	Scenario Description
1	Migrate "as is" of a CLEC resale multi-line business customer to retail. Change Primary Interexchange Carrier (PIC) and Local PIC (LPIC). Freeze PIC and LPIC.
2	Migrate "as specified" of a CLEC resale multi-line residential customer to retail. Delete Ring Mate (residential) from the billing telephone number (BTN), add Return Call and a regional Calling Plan.

[70] Because of limited CLEC activity in MA at the time of the test, NY orders were included to increase sample size.

[71] BA-MA established that Level 5 wholesale orders are equivalent to retail service orders that are entered into DOE. Level 2 wholesale orders are equivalent to retail service orders that are entered directly into SOP.

Number	Scenario Description
3	Migrate the BTN of a CLEC resale multi-line residential customer to retail. Migrate "as specified" to drop a flowthrough feature.
4	Migrate one auxiliary line (AUX) of a CLEC resale multi-line residential customer to retail. The migration occurs “as specified” to drop a flowthrough feature.
5	**SUPPLEMENT:** Add Caller ID w/name and Anonymous Call Rejection to auxiliary line immediately after the initial order is confirmed.
6	Add features to a retail multi-line business customer. Add Call Waiting and Call Forwarding. Request a Circular Hunt group on the added lines. Add Call Waiting to the first line only.
7	Add features to a retail multi-line business customer. Add a Circular Hunt group to each line of the lines.
8	**SUPPLEMENT:** Cancel order one day BEFORE the due date.
9	Change the main telephone number (TN) for a retail multi-line business customer. The lines are in a hunt group. Continue to have the new main number hunt to the second line. Change the directory listing to a straight-line listing and list the new telephone number.
10	Move a retail multi-line business customer to a new location served by a same central office. Add an additional line to the new location and into a Series Hunt group.
11	Add two lines to a retail multi-line business customer. Include the new POTS lines in the Series Hunt group.
12	**SUPPLEMENT:** Change order to request for only one additional line after the local service confirmation (LSC) is received.
13	Add a new asymmetrical digital subscriber line (ADSL) line to a retail multi-line business customer.
14	Change directory listing (DL) of a retail business one-line customer. Change directory listing from Unlisted to Caption listing.
15	Suspend service of a retail single-line residential customer. Due Date for suspension is three days beyond the submit date.
16	Restore service for a retail single-line business customer. Due Date for restore of service is one day beyond submit date.
17	**SUPPLEMENT:** Cancel order after initial order is confirmed.
18	Disconnect a retail single-line business customer.
19	New retail residential customer orders one line with two DLs. The requested due date is five days beyond the green light date.
20	New retail residential customer orders one line and flowthrough and non-flowthrough features. Select PIC and LPIC. Submit DL for main and additional listing.
21	New retail business customer orders two lines in a sequential hunt group. Customer selects MCI for PIC and BA-MA for LPIC. Requested installation date is standard interval plus three days. Submit DL for listed service.

Number	Scenario Description
22	Add features to a retail Centrex ten-line business customer. Add Speed Calling 8 on eight of the stations.
23	Change a retail Centrex multi-line business customer's directory listing. Change from simple listing to a caption listing with multiple names and associated numbers.
24	Add two additional lines to a retail Centrex multi-line business customer. Add Call Forwarding.
25	Add one integrated services digital network basic rate interface (ISDN BRI) line to an existing retail residential customer.
26	Add one ISDN primary rate interface (PRI) line to an existing retail business customer.
27	New retail business customer orders one ISDN PRI line.
28	Change a retail single-line business customer's POTS line to an ISDN BRI.
29	Disconnect retail one line ISDN BRI residential customer.
30	New private line service for a retail business customer. Request a three-location 56 kbps multi-point private line service.
31	Add a 'new leg' to a retail multi-line business 56kbps multi-point private line customer.
32	Add new Flexpath trunks to retail business customer.
33	Disconnect a retail business customer's point to point 4W 56kbps private line circuit.
34	Disconnect a business retail customer's Flexpath Trunks. The customer has one line and 21 TNs.
35	New retail residential customer orders one line. Request straight-line listing.
36	New retail business customer orders one line. Request straight-line listing.
37	CLEC customer ports TN to RBOC.
38	Add a line to an existing single-line business customer. List with a straight-line listing.
39	Migrate a CLEC customer being served by a UNE-L to retail with LNP. Listing should not change.
40	Move a retail loop business customer to a new address. Change listed name when the move occurs. Submit DL with the new customer name.
41	Add a line for ADSL service to an existing business customer.
42	Add four-wire HDSL service to an existing business customer.
43	Add two-wire HDSL service to an existing business customer.
44	New business customer orders DS1 service.
45	Add DS1 to an existing retail business customer who has already a DS1.
46	**SUPPLEMENT:** Change due date to two days beyond initial date after the initial order is confirmed.
47	**Unbundled Dark Fiber Inquiry:** Request four Dark Fiber Pairs to be provided.

2.3 Test Targets & Measures

The test target was the ability of orders to flowthrough the BA-MA ordering systems without manual intervention based on available flowthrough documentation. Processes, sub-processes, evaluation measures, and associated test cross-reference numbers are summarized in the following table. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in Section 3.1 "Results & Analysis."

Table 3-3: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Determine if order should "Flowthrough"	Inspection	Applicability as "Flowthrough" in existing publicly available flowthrough documentation Applicability as "Flowthrough" in existing system	POP-3-1, POP-3-2, POP-3-3
Submit "Flowthrough" order through GUI	Transaction generation	Accessibility of interface	POP-2
Submit "Flowthrough" order through EDI	Transaction generation	Accessibility of interface	POP-1
Identify orders that did "Flowthrough"	Transaction generation, inspection, logging	Compliance with "Flowthrough" standards	POP-3-1, POP-3-2, POP-3-3, POP-3-4
Identify orders that did not "Flowthrough"	Transaction generation, inspection, logging	Clarity of manual steps	POP-3-1, POP-3-2, POP-3-3, POP-3-4
Verify all orders were processed	Logging	Completeness of order processing	POP-3-1, POP-3-2, POP-3-3, POP-3-4

2.4 Data Sources

The data collected for the test are summarized in the following table.

Table 3-4: Data Sources for Order Flowthrough Evaluation

Document	File Name	Location in Work Papers	Source
Massachusetts OSS Evaluation Master Test Plan	http://www.magnet.state.ma.us/dpu/telecom/99-271/OSS_Test_Plan/MasterTestPlan.pdf	POP-3-B-1	KPMG Consulting
BA-MA Generic Order Flowthrough Scenarios (January, 2000)	bap_118.doc	POP-3-A-2	BA-MA
BA-MA Generic Order Flowthrough Scenarios (May, 2000)	BANO_052000.pdf	POP-3-A-3	BA-MA
BA-MA Generic Order Flowthrough Scenarios (June, 2000)	BANOJun00.pdf	POP-3-A-4	BA-MA
BA-North USOC In-Scope Table, Resale Products (April, 2000)	usoc_insc_resn.pdf	POP-3-A-5	BA-MA
BA-North USOC In-Scope Table, Resale Products (June, 2000)	UsocResNoJun00.pdf	POP-3-A-6	BA-MA
BA-North USOC In-Scope Table, Platform and UNE Products (March, 2000)	nplatform.pdf	POP-3-A-9	BA-MA
BA-North USOC In-Scope Table, Platform and UNE Products (June, 2000)	nplatformjun00.pdf	POP-3-A-10	BA-MA
BA-MA Flowthrough reports	Hard Copy	POP-3-B-4	BA-MA
BA-MA Order Flowthrough Parity Report	MA parity_scen.xls	POP-3-A-12	BA-MA
CLEC Orders and Order Responses	Hard Copy	POP-3-B-7, POP-3-B-8	CLECs
Order Timeliness Report	Ma_timeliness.xls	POP-3-B-3	KPMG Consulting
Order Flowthrough Validation Report	FTrep_validation.xls	POP-3-A-17	KPMG Consulting

2.4.1 Data Generation/Volumes

BA-MA, participating CLECs, and KPMG Consulting performed the data collection activities for this test.

- KPMG Consulting generated test transactions as part of POP1 and POP2 with unique Purchase Order Numbers (PONs) and gathered data on these transactions, including the receipt of LSCs.
- A flowthrough indicator was added to the unique PON for each test instance. The expected flowthrough indicator, set prior to submission of the test instance, was based on the information provided by BA-MA documentation and personnel. This indicator was used to facilitate data collection and analysis.
- BA-MA generated a set of reports that identified transactions that did and did not flowthrough.
- Participating CLECs submitted commercial pre-order, order, and response data in electronic text format for EDI orders and in hard copy for GUI orders.
- BA-MA analyzed and reported on the retail equivalent of a list of KPMG Consulting scenarios as well as the flowthrough eligibility of the retail scenarios. KPMG Consulting provided the scenarios for BA-MA report.

2.5 Evaluation Methods

For the Bell Atlantic-Massachusetts OSS Evaluation, KPMG Consulting conducted the Order Flowthrough Evaluation focusing on the following areas:

- Identification of test cases eligible for Flowthrough Testing
- Development of report to track whether a transaction flowed through
- Submission of transactions via EDI and GUI
- Validation of test results
- Identification and analysis of unexpected results

2.5.1 Achieved Flowthrough Test

The Achieved Flowthrough Test compares BA-MA flowthrough reports to KPMG Consulting's flowthrough expectations. BA-MA's flowthrough reports detailed the orders that actually did flow through by stating "flowthrough" or "non-flowthrough." This test examined orders submitted as part of the POP1 and POP2 tests.

Using publicly available Bell Atlantic documentation, KPMG Consulting assigned expected flow-though indicators to the examined orders. The examined orders included standalone orders, supplemental orders, and planned errors (orders for which an automated error/reject response

was expected). Planned errors were not corrected. KPMG Consulting monitored and tracked these orders to identify those requiring manual handling in the TISOC.

2.5.2 Commercial Flowthrough Test

KPMG Consulting evaluated a sample of actual CLEC unbundled network elements (UNE) and UNE-platform (UNE-P) orders to determine "actual" and "achieved" flowthrough performance. KPMG Consulting requested all actual pre-order, order, and order response data from CLECs for the period January 28 through February 11, 2000. From this period, KPMG Consulting randomly selected a subset of the GUI transaction data based on PON. Additionally, KPMG Consulting randomly selected a subset of EDI transaction data order based on the date submitted. KPMG Consulting verified the actual flowthrough status of the orders against BA-MA reports. Actual flowthrough rate is the percentage of orders that flowthrough versus the total number of orders sent. In addition, KPMG Consulting identified and documented the cause for orders requiring manual intervention, when possible.

2.5.3 Flowthrough Parity Test

The objective of the Flowthrough Parity Test was to report on the similarity between wholesale and retail order flowthrough eligibility and processing. In order to assess parity between the processes, BA-MA established that flowthrough eligible or Level 5 wholesale orders are equivalent to retail service orders that are entered into DOE. Furthermore, non-flowthrough ("No Flow") wholesale orders are equivalent to retail service orders that are entered directly into SOP. KPMG Consulting required BA-MA to prepare and provide a detailed report on retail versus wholesale order flowthrough eligibility, based on test case scenarios selected.

2.6 Analysis Methods

The Order Flowthrough Evaluation included a checklist of evaluation criteria developed by the test manager during the initial phase of the Bell Atlantic-Massachusetts OSS Evaluation. These evaluation criteria, detailed in the *Master Test Plan*, provided the framework of norms, standards, and guidelines for the Order Flowthrough Evaluation.

The data collected were analyzed employing the evaluation criteria referenced above.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1.1 Results & Analysis – Achieved Flowthrough

The following table summarizes the evaluation criteria, the associated test cross-reference, the test results, and supporting comments.

Table 3-5: POP3 Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-3-1	BA-MA Resale transactions known to be flowthrough are Level 5.	Satisfied	The performance standard for percent flowthrough achieved for resale orders is 95% as stated by the New York State Carrier-to-Carrier Guidelines. BA-MA attained an achieved flowthrough rate of 100% in the Functional and Volume Evaluations for resale orders. KPMG Consulting's initial assessment of expected flowthrough orders was based on BA-MA information provided in February 2000. Based on the available flowthrough documentation at that time, BA-MA attained an achieved flowthrough rate of 85.3% in the Functional Evaluation for resale orders. The unexpected results associated with this test were caused by incorrect flowthrough information obtained from BA-MA. BA-MA flowthrough information available prior to testing indicated that certain hunting scenarios were flowthrough eligible. However, after further analysis by BA-MA, KPMG Consulting was informed that hunting was not flowthrough eligible for the test cases in question. BA-MA updated its flowthrough documentation to reflect accurately the flowthrough eligibility of the hunting scenarios in question on June 17, 2000. KPMG Consulting validated that the corrections were made.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-3-2	BA-MA UNE-P transactions known to be flowthrough are Level 5.	Satisfied	The performance standard for percent flowthrough achieved for UNE-P orders is 95% as stated by the New York State Carrier-to-Carrier Guideliness. BA-MA attained an achieved flowthrough rate of 98.5% in the Functional Evaluation and 100% in the Volume Stress Evaluation for UNE platform orders.
POP-3-3	BA-MA UNE-L transactions known to be flowthrough are Level 5.	Satisfied	The performance standard for percent flowthrough achieved for UNE-L orders is 95% as stated by the New York State Carrier-to-Carrier Guideliness. BA-MA attained an achieved flowthrough rate of 100% in the Functional and Volume Evaluations for UNE-L orders. KPMG Consulting's initial assessment of expected flowthrough loop orders was based on "Bell Atlantic-North Generic Ordering Flow Through Scenarios" (revised January 19, 2000). Based on the flowthrough documentation available at the time of testing, BA-MA attained an achieved flowthrough rate of 62.1% in the Functional Evaluation and 100% in the Volume Stress Evaluation for UNE-L orders. The unexpected results associated with this test were caused by incorrect information in the "Bell Atlantic-North Generic Ordering Flow Through Scenarios" (revised January 19, 2000). BA-MA flowthrough documents available prior to testing indicated that EEL disconnects and loop migrations were flowthrough eligible. However, after further analysis by BA-MA, KPMG Consulting was informed that Extended Enhanced Loop (EEL) disconnects are not flowthrough eligible and only retail to CLEC loop migrations (versus CLEC to CLEC loop migrations) are flowthrough eligible.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			BA-MA updated its flowthrough documentation in May 2000 to correct these inaccuracies. KPMG Consulting validated that the corrections were made.
POP-3-4	LSCs are received within two hours for orders that are Level 5 flowthrough.	Satisfied	100% of the Level 5 orders, as reported by BA-MA, received an LSC within two hours during the Functional Evaluation (POP 1 and POP 2).

3.1.2 Achieved Flowthrough Data Segmentation

KPMG Consulting and BA-MA reported on a transaction population of 20,073 orders that received LSCs. The ordering population was segmented into two categories.

Table 3-6: Segmenting Test Transactions

	Functional Evaluation	Volume Performance Evaluation
LSC transactions	708	19,365
Expected to Flowthrough	250	19,365

Functional Evaluation – Captures the results of transactions submitted as part of POP1 and POP2.

Volume – Captures the results of transactions of the normal, peak, and stress volume testing submitted as part of POP1.

3.1.3 Identifying Achieved Flowthrough Unexpected Results

When analyzing the 20,073 orders, KPMG Consulting identified 1,451 orders for which expectations did not match BA-MA reported information. KPMG Consulting determined that 1,415 (48 of which were due to KPMG Consulting error and 1,367 were sent during SOP downtime) of the orders were processed correctly by BA-MA based on the nature of the orders (see table POP-3-6: Correctly Processed Orders). KPMG Consulting reviewed the remaining 36 transactions with BA-MA to determine the reasons for the unexpected results. Based on this analysis, it was determined that **one** result was actually unexpected.

Table 3-7: Identifying Unexpected Results

Level of Analysis	Number of Transactions Functional	Number of Transactions Volume	Total Transactions
Total Transactions Requiring Additional Research	84	1,367	1,451
Determined by KPMG Consulting to have been created in error	48	0	48
Transactions investigated and resolved by BA-MA and KPMG Consulting	35	0	35
Orders sent during SOP downtime	0	1,367	1,367
Actual unexpected results	1	0	1

3.2 Identifying Commercial Flowthrough Results

Of the random sample of 176 New York and Massachusetts orders from the commercial orders received, 119 of the orders received LSCs. 105 orders were flowthrough eligible. For this sample, BA attained an achieved flowthrough rate of 59% and an actual flowthrough rate of 35%. Achieved flowthrough rate is calculated by dividing the total number of Level 5 orders by the total number of flowthrough eligible orders. Actual flowthrough rate is determined by dividing the total number of Level 5 orders by the total number of orders submitted. Therefore, actual flowthrough rate includes CLEC order errors and BA system and process errors. Achieved flowthrough rate measures BA system flowthrough performance against documented capabilities.

The Commercial Flowthrough Test represents only one part of the Order Flowthrough Evaluation. KPMG Consulting's primary assessment methodology of the order flowthrough functionality of BA-MA's systems occurs within the Achieved Order Flowthrough Test.

The following table identifies the order responses received from the commercial sample.

Table 3-8: Commercial Flowthrough Transaction Summary

Responses	Number	Percentage of total orders with responses
Total Orders with Responses	176	100%
Orders receiving SEMs	57	32%
Orders receiving LSCs	119	68%
Non-flowthrough Eligible Orders with LSCs	14	8%
Flowthrough Eligible Orders with LSCs	105	60%
Achieved Flowthrough Orders	62	
Flowthrough Order Failures	43	

3.3 Flowthrough Parity Results

KPMG Consulting reviewed BA-MA's report on the retail equivalent and flowthrough eligibility of wholesale service order scenarios. BA-MA has indicated that the retail equivalent to Level 5 orders is entry into DOE. Alternatively, the retail equivalent to Level 2 orders is entry into SOP. KPMG Consulting believes BA-MA's representation of the wholesale to retail comparison is reasonable.

Of the 48 scenarios submitted for comment to BA-MA, BA-MA responded that 44 of the retail equivalent scenarios matched the flowthrough eligibility of the wholesale scenarios. Eleven of the scenarios were flowthrough eligible in both the wholesale and retail environments. Thirty-three of the cases were "no flow" scenarios in both the wholesale and retail environments. Four scenarios were flowthrough eligible only in the retail environment. Accordingly, those four identical cases were "no flow" scenarios only in the wholesale environment.

D. Test Results: Documentation Review (POP4)

1.0 Description

The Documentation Evaluation test was an operational analysis of the documentation developed by Bell Atlantic-Massachusetts (BA-MA) to support Competitive Local Exchange Carriers (CLECs) with Operations Support Systems (OSS) issues associated with pre-ordering, ordering, and provisioning business processes.

This high level review was intended to ensure documentation is prepared and distributed by BA-MA in accordance with criteria specified in the *Master Test Plan* (MTP). In cases where documents were essential to the establishment of electronic interfaces or to the conduct of transaction testing, a more detailed review of the documents was completed. The functional accuracy of the documentation, including how to populate Electronic Data Interchange (EDI) and Graphical User Interface (GUI) transactions, was verified as a part of the set-up and on-going activities required for executing the GUI and EDI Functional Evaluations.

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

BA-MA provides several categories of documentation that describe and support pre-ordering, ordering and provisioning business processes. Bell Atlantic's Pre-Order and Order Business Rules and EDI Guides (LSOG 2 and LSOG 4) itemize the information required of a CLEC to construct and submit pre-order and order transactions to Bell Atlantic. CLEC/Resale Handbooks are written as general reference guides and include information about establishing a CLEC-Bell Atlantic relationship, help desk contact numbers, training courses, and pre-order and order transaction types. Finally, training manuals are intended as supplementary materials to support a CLECs ability to perform pre-order and order service transactions via the GUI and to support end users.

Changes and updates to documentation are distributed through BA-MA's established Change Control procedure. Once a document is released by Change Control it is also posted on BA-MA's Supplementary Documentation website. Documents use version numbers, publication dates, and implementation dates to differentiate among different versions. Updates to sections of specific documents released by Change Control supercede the previous section or document.

2.2 Scenarios

None of the scenarios in the Master Test Plan were designed specifically for this test. However, all scenarios developed for use in transaction tests (POP1 & POP2) of BA-MA's GUI and EDI systems relied heavily on the use of BA-MA business rules and EDI interface guides.

2.3 Test Targets & Measures

The objective of this evaluation is to determine the accuracy, availability, utility and usability of the POP documentation. Processes, sub-processes, evaluation measures, and associated test cross-reference numbers are summarized in the following table. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in Section 3.1 "Results & Analysis."

Table 4-1: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Acquire Documentation	Receive current documentation	Availability of up-to-date documentation	POP-4-1, POP-4-2, POP-4-3, POP-4-4
Evaluate Documentation	Evaluate documentation format	Organization of documentation	POP-4-5, POP-4-6, POP-4-7, POP-4-8, POP-4-9, POP-4-10, POP-4-11
Evaluate Documentation	Evaluate documentation content	Usability of documentation Comprehensiveness of documentation Accuracy of documentation	POP-4-12, POP-4-13, POP-4-14, POP-4-15, POP-4-16, POP-4-17, POP-4-18, POP-4-19, POP-4-20, POP-4-21, POP-4-22, POP-4-23, POP-4-24
Evaluate EDI Interface Documentation	Evaluate EDI interface population documentation	Compliance to standards	POP-4-20, POP-4-21

Table 4-2: Test Target Cross-Reference: Pre-Ordering

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Validate address	Create address validation request transaction	Clarity, accuracy, and completeness of documentation	POP-4-12, POP-4-19, POP-4-20, POP-4-21
Validate address	Correct errors	Clarity, accuracy, and completeness of documentation	POP-4-12, POP-4-15, POP-4-24
Retrieve CSR	Determine type of inquiry to send	Clarity, accuracy, and completeness of documentation	POP-4-12, POP-4-19, POP-4-20, POP-4-21
Retrieve CSR	Create CSR request transaction	Clarity, accuracy, and completeness of documentation	POP-4-12, POP-4-19, POP-4-20, POP-4-21
Retrieve CSR	Correct errors	Clarity, accuracy, and completeness of documentation	POP-4-12, POP-4-15, POP-4-24
Request available telephone number(s)	Create available telephone number request transaction	Clarity, accuracy, and completeness of documentation	POP-4-12, POP-4-19, POP-4-20, POP-4-21
Request available telephone number(s)	Correct errors	Clarity, accuracy, and completeness of documentation	POP-4-12, POP-4-15, POP-4-24
Reserve TN(s)	Create telephone number reservation transaction	Clarity, accuracy, and completeness of documentation	POP-4-12, POP-4-19, POP-4-20, POP-4-21
Reserve TN(s)	Correct errors	Clarity, accuracy, and completeness of documentation	POP-4-12, POP-4-15, POP-4-24
Cancel or exchange TN reservation	Create telephone number cancellation or exchange transaction	Clarity, accuracy, and completeness of documentation	POP-4-12, POP-4-19, POP-4-20, POP-4-21
Cancel or exchange TN reservation	Correct errors	Clarity, accuracy, and completeness of documentation	POP-4-12, POP-4-15, POP-4-24
Determine service and feature availability	Create service availability request transaction	Clarity, accuracy, and completeness of documentation	POP-4-12, POP-4-19, POP-4-20, POP-4-21
Determine service and feature availability	Correct errors	Clarity, accuracy, and completeness of documentation	POP-4-12, POP-4-15, POP-4-24

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Qualify loop	Create loop qualification transaction	Clarity, accuracy, and completeness of documentation	POP-4-12, POP-4-19, POP-4-20, POP-4-21
Qualify loop	Correct errors	Clarity, accuracy, and completeness of documentation	POP-4-12, POP-4-15, POP-4-24
Qualify xDSL loop	Create loop qualification transaction	Clarity, accuracy, and completeness of documentation	POP-4-12, POP-4-19, POP-4-20, POP-4-21
Qualify xDSL loop	Correct errors	Clarity, accuracy, and completeness of documentation	POP-4-12, POP-4-15, POP-4-24
Determine due date / appointment availability	Create due date / appointment availability request transaction	Clarity, accuracy, and completeness of documentation	POP-4-12, POP-4-19, POP-4-20, POP-4-21
Determine due date / appointment availability	Correct errors	Clarity, accuracy, and completeness of documentation	POP-4-12, POP-4-15, POP-4-24
Request access billing customer service record	Create CABS CSR (CCSR) request	Clarity, accuracy, and completeness of documentation	POP-4-12, POP-4-19, POP-4-20, POP-4-21
Request access billing customer service record	Correct errors	Clarity, accuracy, and completeness of documentation	POP-4-12, POP-4-15, POP-4-24
Request installation status	Create installation status request	Clarity, accuracy and completeness of documentation	POP-4-12, POP-4-19, POP-4-20, POP-4-21
Request installation status	Correct errors	Clarity, accuracy and completeness of documentation	POP-4-12, POP-4-15, POP-4-24
Retrieve service order from SOP	Create service order from SOP request	Clarity, accuracy and completeness of documentation	POP-4-12, POP-4-19, POP-4-20, POP-4-21
Retrieve service order from SOP	Correct errors	Clarity, accuracy and completeness of documentation	POP-4-12, POP-4-15, POP-4-24
Retrieve directory listing	Create directory listing inquiry	Clarity, accuracy and completeness of documentation	POP-4-12, POP-4-19, POP-4-20, POP-4-21

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Retrieve directory listing	Correct errors	Clarity, accuracy and completeness of documentation	POP-4-12, POP-4-15, POP-4-24
Reservation maintenance inquiry	Create reservation maintenance transaction	Clarity, accuracy, and completeness of documentation	POP-4-12, POP-4-19, POP-4-20, POP-4-21
Reservation maintenance inquiry	Correct errors	Clarity, accuracy, and completeness of documentation	POP-4-12, POP-4-15, POP-4-24
Reservation maintenance modification inquiry	Create reservation maintenance modification transaction	Clarity, accuracy and completeness of documentation	POP-4-12, POP-4-19, POP-4-20, POP-4-21
Reservation maintenance modification inquiry	Correct errors	Clarity, accuracy, and completeness of documentation	POP-4-12, POP-4-15, POP-4-24

Table 4-3: Test Target Cross-Reference: Ordering

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Submit order	Determine type of order to create	Clarity and accuracy of documentation	POP-4-12, POP-4-19, POP-4-20, POP-4-21
Submit order	Create order transaction(s)	Clarity, accuracy, and completeness of documentation	POP-4-12, POP-4-19, POP-4-20, POP-4-21
Supplement an order	Create supplement transaction(s)	Clarity, accuracy, and completeness of documentation	POP-4-12, POP-4-19, POP-4-20, POP-4-21
Supplement an order	Correct errors	Clarity, accuracy, and completeness of documentation	POP-4-12, POP-4-15, POP-4-24

2.4 Data Sources

The sources of data for this test include the following: the BA-MA customer and training documents that were distributed to the team; the information gathered from interviews with CLECs, Bell Atlantic personnel and KPMG Consulting test team members; and the documents developed by KPMG Consulting (e.g., reviews, interviews) during the course of the test. The above mentioned sources are listed in Table 4.4.

Documentation

Documentation was obtained from the BA-MA Website http://www.bell-atl.com/wholesale/html/customer_doc.htm, from e-mail messages sent by BA-MA through CLEC distribution lists, and from training courses attended by testing team members.

Table 4.4 contains a list of the BA-MA documents that were provided to the test manager at the inception of the test. New releases of documents that were vital to conducting transaction testing were re-evaluated. These reviews are located in section 3.1, Results and Analysis, of this report.

Interviews

Information on Bell Atlantic's customer documentation was gathered through content and management interviews with CLECs and Bell Atlantic respectively. Content interviews focused on the usability of the documentation, while management interviews concentrated on Bell Atlantic's training documentation. Finally, test team members were interviewed during the course of live tests of BA-MA's Graphical User Interface (GUI) and Electronic Data Interchange (EDI) systems to gather information about the accuracy and utility of documentation in a business environment. A list of the interviews conducted during the course of this test is summarized in Table 4.4.

References

Additional reference material was developed by KPMG Consulting (e.g., documentation reviews, observations, exceptions) during the course of this test. The information gathered from these sources was incorporated in the reviews located in section 3.1, Results and Analysis, of this report. These references are listed in Table 4.4.

Table 4-4: Data Sources for Documentation Review

Document	File Name	Location in Work Papers	Source
Bell Atlantic-North Order Business Rules Version 1.7 LSOG 2 (August 1999)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic-North Order Business Rules Version 1.8.1 (LSOG 2) (February 2000)	Hard Copy	Engagement File Work Papers	Bell Atlantic

Document	File Name	Location in Work Papers	Source
Bell Atlantic-North Order Business Rules Version 1.10.1 (LSOG 2) (June 2000)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic-North Order EDI Guide Version 1.7, Issue 8 (August 1999)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic-North Order EDI Guide Version 1.8 (Issue 8) (February 2000)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic-North Order EDI Guide Version 1.10 (June 2000)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Pre-Order Business Rules Version 2.5.1 (LSOG 3) (October 1999)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Pre-Order Business Rules Version 2.6.1 (LSOG 3) (February 2000)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Pre-Order Business Rules Version 2.7.1 (LSOG 3) (April 2000)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Pre-Order Business Rules Version 2.8.1 (LSOG 3) (June 2000)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Pre-Order EDI Guide Version 2.5 (Issue 9) (October 1999)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Pre-Order EDI Guide Version 2.6 (Issue 9) (February 2000)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Pre-Order EDI Guide Version 2.8.1 (June 2000)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Order Business Rules Version 4.1.1 (LSOG 4) (February 2000)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Order Business Rules Version 4.3.1 (LSOG 4) (June 2000)	Hard Copy	Engagement File Work Papers	Bell Atlantic

Document	File Name	Location in Work Papers	Source
Bell Atlantic Order EDI LSOG Mechanization Specification Version 4.1.1 (February 2000)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Order EDI LSOG Mechanization Specification Version 4.3.1 (June 2000)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Pre-Order Business Rules Version 4.1.1 (LSOG 4) (February 2000)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Pre-Order Business Rules Version 4.3.1 (LSOG 4) (June 2000)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Pre-Order EDI Guide Version 4.1.1 (Issue 9) (February 2000)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Pre-Order EDI Guide Version 4.3.1 (June 2000)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic CLEC Handbook Series, Volume I (March 1999)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic CLEC Handbook Series, Volume I March 2000)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic CLEC/ Resale Handbook Series Volume II (September 1999)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic CLEC/Resale Handbook Series Volume II (March 2000)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic CLEC Handbook Series, Volume III (March 1999)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic CLEC Handbook Series, Volume III (March 2000)	Hard Copy	Engagement File Work Papers	Bell Atlantic

Document	File Name	Location in Work Papers	Source
Bell Atlantic Resale Handbook Series, Volume I (September 1999)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Resale Handbook Series, Volume III (September 1999)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Local Services Common Web GUI User Guide Version 3.3 (October 1999)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Local Services Common Web GUI User Guide Version 3.4 (January 2000)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Direct Carrier Access System (DCAS) User Guide for Unbundled Network Elements (UNEs) (As supplied during Bell Atlantic training in October 1999)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Telecom Industry Service Resale Training Non-Complex Products and Services Student Guide (As supplied during Bell Atlantic training in October 1999)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Telecom Industry Service Resale Training Complex Products and Services Student Guide (As supplied during Bell Atlantic training in October 1999)	Hard Copy	Engagement File Work Papers	Bell Atlantic
MA USOC Codes (FTP January 11, 2000)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Access Service Request (ASR) Business Rules Version 21 (September 1999)	Hard Copy	Engagement File Work Papers	Bell Atlantic
Bell Atlantic Access Service Request (ASR) Business Rules Version 21.3 (June 2000)	Hard Copy	Engagement File Work Papers	Bell Atlantic

Document	File Name	Location in Work Papers	Source
P4 Review_NO_Business Rules_v1.7.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_NO_Business Rules_v1.8.1.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_NO_Business Rules_v1.10.1.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_NO_EDI_Guide_ v1.7.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_NO_EDI_Guide_ v1.8.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_NO_EDI_Guide_ v1.10.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_PO_Business Rules_v2.5.1.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_PO_Business Rules_v2.6.1.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_PO_Business Rules_v2.7.1_2.8.1.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_PO_EDI_Guide_ v2.5.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_PO_EDI_Guide_ v2.6.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_PO_EDI_Guide_ v2.8.1doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_Order_Business_ Rules_v4.1.1. doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_Order_Business_ Rules_v4.3.1. doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_Order_EDI_ Specs_v4.1.1.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_Order_EDI_ Specs_v4.3.1.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting

Document	File Name	Location in Work Papers	Source
P4 Review_PO_Business_ Rules_v4.1.1.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_PO_Business_ Rules_v4.3.1.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_PO_EDI_Guide_ v4.1.1.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_PO_EDI_Guide_ v4.3.1.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_CLEC Handbook Vol I.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_CLEC Handbook Vol I.2.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_CLEC Handbook Vol II.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_CLEC Handbook Vol II.2.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_CLEC Handbook Vol III.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_CLEC Handbook Vol III.2.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_Resale Handbook Vol I.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_Resale Handbook Vol III.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_Local Services Common Web Gui Guide_ v3.3.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_Local Services Common Web Gui Guide_ v3.4.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_ASR_v21.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_ASR_v21.3.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting

Document	File Name	Location in Work Papers	Source
P4 Review_DCAS User Guide.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_TIS Resale Training Non-Complex Products and Services.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_TIS Resale Training Complex Products and Services.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
P4 Review_USOCs.doc	P4 Doc_Evals.zip	POP-4-A-1	KPMG Consulting
CLEC A Interview_Jan_5_2000.doc	P4 CLEC_ Interviews.zip	POP-4-A-2	KPMG Consulting
CLEC A Interview_Response_Feb_17_ 2000.doc	P4 CLEC_ Interviews.zip	POP-4-A-2	KPMG Consulting
CLEC B Interview_Jan_6_ 2000.doc	P4 CLEC_ Interviews.zip	POP-4-A-2	KPMG Consulting
CLEC B Interview_Response_Feb_4_ 2000.doc	P4 CLEC_ Interviews.zip	POP-4-A-2	KPMG Consulting
CLEC C Interview_Jan_7_ 2000.doc	P4 CLEC_ Interviews.zip	POP-4-A-2	KPMG Consulting
Bell Atlantic CLEC Training Docs Interview_011400.doc	P4 BA Training Docs_ Interview.doc	POP-4-A-3	KPMG Consulting
Bell Atlantic CLEC Training Docs	P4 BA Training Docs_ Interview.doc	POP-4-A-3	KPMG Consulting
Interview_Response_020700. doc	P4 BA Training Docs_ Interview.doc	POP-4-A-3	KPMG Consulting
P4 Internal_Interview_EDI Functional Eval.doc	P4 Internal_Interviews. zip	POP-4-A-4	KPMG Consulting
P4 Internal_Interview_GUI Functional Eval.doc	P4 Internal_Interviews. zip	POP-4-A-4	KPMG Consulting
P4 Internal_Interview_HD Functional Eval. Doc	P4 Internal_Interviews. zip	POP-4-A-4	KPMG Consulting
P4 Internal_Local Services Common Web GUI Guide_3.4.doc	P4 Internal_Interviews. zip	POP-4-A-4	KPMG Consulting

2.4.1 Data Generation/Volumes

This test did not rely on data generation or volume testing.

2.5 Evaluation Methods

The POP4 Documentation Review examined BA-MA documentation for structure, management procedures, and content quality as defined by the evaluation criteria. Data used in the evaluation of BA-MA documents was obtained through the following methods.

1. Documentation Reviews- Prior to the initiation to the test, evaluation checklists were created to facilitate a structured review of the documentation. During the course of the test, the test manager monitored documentation changes and releases of new versions of documentation via Flash announcements and BA-MA's website, respectively.

2. Documentation Interviews- Interviews were conducted with the Bell Atlantic staff responsible for the creation and maintenance of BA-MA training documentation, as well as with CLECs who used BA-MA's documentation to conduct business. Interviews were conducted with test team members during the course of live tests of BA-MA's Graphical User Interface (GUI) and Electronic Data Interchange (EDI) systems to gather information about the accuracy and utility of documentation in a business environment.

2.6 Analysis Methods

The Documentation Review included a checklist of evaluation criteria developed by the test manager during the initial phase of the Bell Atlantic-Massachusetts OSS Evaluation. These evaluation criteria, detailed in the *Master Test Plan*, provided the framework of norms, standards, and guidelines for the Documentation Review.

The data collected were analyzed employing the evaluation criteria referenced above.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below.

Table 4-5: POP4 Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
	Management Elements[72]:		
POP-4-1	Responsibilities and procedures for developing, updating and correcting documentation are clearly defined.	Satisfied	The Telecom Industry Services Training & Education Team and the Massachusetts CLEC Training Manager are responsible for overseeing the development of, updating, and correcting CLEC training documentation. KPMG Consulting interviewed the CLEC Training Manager regarding the process and her responsibilities.
POP-4-2	Responsibilities and procedures for maintaining distribution lists and distributing documentation are clearly defined.	Satisfied	KPMG Consulting learned during interviews with BA-MA that internal process mandates that CLEC training documentation be distributed to attendees of Bell Atlantic training courses. Hard copies of documents are provided to all attendees on the first day of training.
POP-4-3	Distribution procedure allows the latest document version to be made available to interested parties in a timely manner.	Satisfied	Training documentation is updated on a continual basis. Bell Atlantic does not publish a distribution schedule for new releases of documentation. Instead, Bell Atlantic alters each document on an on-going basis to reflect its current practices and procedures. Per this method, Bell Atlantic training class attendees receive the most current/applicable paper version of each document.

[72] Management Elements pertain only to BA-MA training documentation. This includes Bell Atlantic Direct Carrier Access System (DCAS) User Guide for Unbundled Network Elements (UNEs), Bell Atlantic Telecom Industry Service Resale Training Non-Complex Products and Services Student Guide, and Bell Atlantic Telecom Industry Service Resale Training Complex Products and Services Student Guide.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-4-4	Training is provided for use of the documentation.	Satisfied	The CLEC training manager explained that each training document is designed for a specific class. The instructor covers the use of the document as well as its subject matter. Further assistance on training documentation is provided to attendees of training courses for 30 days after the course is taken. After the assistance period ends the CLEC may make procedural and other inquiries through BA-MA's documented Help Desk channels.
	Structure Elements:		
POP-4-5	Document version is indicated within each document and is clear throughout the document.	Satisfied	BA-MA includes information to distinguish among versions. Document versions are indicated throughout all BA-MA documentation that is published via Bell Atlantic's Supplementary Documentation website (http://www.bellatlantic.com/wholesale/html/cd_supp_document.htm). Though document versions do not appear in training manuals distributed during training courses, the documentation contain distribution dates which allow users to differentiate between versions.
POP-4-6	Documents provide cross-references and have clear citations directing readers to relevant sources of additional information.	Satisfied	Documents provide cross references to relevant sources of additional information where applicable. For example, Pre-Order and Order Business Rules and EDI documentation include references to Error code documentation ("Pre-Order, Order and Trouble Administration Error Messages") and may reference Bell Atlantic's supplementary documentation website, respectively. Similarly, training documents reference the GUI user guide. The CLEC Handbook Volume II, Section 5.2 contains both a "supplementary documentation matrix," which includes references to wholesale documentation (e.g., industry standards/guidelines, Bell Atlantic pre-order and order documentation and training courses), and a breakdown of supplementary documentation by eleven different customer types.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-4-7	Documents instruct users how to notify Bell Atlantic about document errors or omissions.	Satisfied	Bell Atlantic's wholesale website contains an explanation of the Change Control process, i.e., the process designed to collect and address documentation issues from the CLEC community. Bell Atlantic's wholesale website http://www.bell-atl.com/wholesale/ html/cd_ind_process.htm provides documentation users with instructions on how to contact Bell Atlantic via the change control process. Web-based documents provide a medium for notifying Bell Atlantic about errors and omissions. CLEC and Resale Handbooks contain links to feedback sheets that include a section on suggested enhancements and areas that require improvement. Contact numbers and names are provided with the training documentation distributed at training courses for follow-up questions and discussion of issues.
POP-4-8	Documents correctly indicate scope and purpose.	Satisfied	All documents reviewed by KPMG Consulting contain a discussion of the purpose and scope of each document.
POP-4-9	Documents contain table of contents.	Satisfied	All documents reviewed by KPMG Consulting contain clear tables of contents.
POP-4-10	Documents are logically organized with clear page numbering and section labeling.	Satisfied	All documents (both online and pdf versions) are logically structured. Page numbers appear on the pdf versions of documents, while links are provided in the web versions of documents. Document sections are labeled in both pdf and web versions.
POP-4-11	Documents contain an adequate glossary of terms, including explanations of relevant acronyms.	Satisfied	Documents contain glossaries of terms or explanations of acronyms where applicable. The CLEC/Resale Handbooks contain extensive Handbook Series glossaries. Training documents contain either glossaries (e.g., CLEC Unbundling glossary in the UNE Training DCAS User Guide) or detailed explanations of acronyms. In addition, acronyms are explained throughout Business Rules and EDI documentation.

Test Cross-Reference	Evaluation Criteria	Result	Comments
	Process Elements:		
POP-4-12	Documents contain methods and procedures to correctly execute processes.	Satisfied	Documents (EDI Guides/Business Rules, Training Guidebooks and CLEC/Resale Handbooks) contain Methods and Procedures to correctly execute processes. Business Rules and EDI Guides contain the information required of a CLEC to construct and submit pre-order and order transactions to Bell Atlantic. Although discrepancies were found between Pre-Order and Order Business Rules and EDI Guides (Versions 2.8.1 and 4.3.1) with respect to missing data fields and conflicting field lengths, these issues have been corrected. The resolution of conflicting Business Rule and EDI Guide specifications has facilitated the efficient execution of pre-order and order transaction processing. Training documents (e.g., DCAS User Guide and BA Resale Training Non-Complex and Complex Product and Services Student Guides) contain descriptions of products and service ordering methods. The DCAS User Guide contains transaction descriptions and DCAS GUI input screen shots for each transaction type. The Resale training non-complex and complex student guides contain descriptions of non-complex and complex products and services offered by Bell Atlantic, define how to access the GUI to process non-complex product service orders and how to set up, access and use the complex services. The CLEC/Resale Handbook Series provides an overview of how to establish the CLEC-BA Relationship including discussions of the technology necessary to establish a local network and descriptions of the processes that should be used to connect with Bell Atlantic, how to become certified as a Reseller, and how to perform general ordering process steps for the services described within the document.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			The CLEC/Resale Handbook Series provides an overview of how to establish the CLEC-Bell Atlantic Relationship-including discussions of the technology necessary to establish a local network and descriptions of the processes that should be used to connect with Bell Atlantic, how to become certified as a Reseller, and how to perform general ordering process steps for the services described within the document.
POP-4-13	Documents identify the suppliers and customers (inputs/outputs) of the process.	Satisfied	Documentation clearly delineates Bell Atlantic's role as well as that of a CLEC for each of the targeted process functions. The CLEC and Resale Handbooks outline a CLEC's and Bell Atlantic's responsibilities (e.g., obtaining certification from a state commission and performing all aspects of account management, respectively) when a CLEC establishes operations. Similarly, Business Rules/ EDI documentation and the Local Services Common Web GUI Guide depict the inputs and the expected outputs for pre-order inquiries and order submissions.
POP-4-14	Documentation includes the expected results of process and cycle times.	Satisfied	Business Rule and EDI documentation includes the expected results of the process (e.g., acknowledgement, completion notices and responses for all EDI pre-order transmission), but do not include cycle times. Cycle times (confirmation, confirmation/notification response time, and rejection response timeliness) for the responses to all submitted orders and pre-orders are included in the New York State Carrier-to-Carrier Guidelines Performance Standards and Reports (February 28, 2000) and Bell Atlantic's Carrier-to-Carrier Metrics (issued on a monthly basis). These documents are used to help determine whether responses have been received in a timely manner.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-4-15	Documentation adequately describes the exception handling process.	Satisfied	Business Rules, EDI documentation and the Local Services Common Web GUI Guide contain references to documentation where help desk descriptions and contact information is included (e.g., CLEC Handbook Volume II). The functions of the various help desks (e.g., Bell Atlantic System Support, Bell Atlantic Web GUI Business Help Desk, Bell Atlantic RETAS Help Desk and the Telecom Industry Services Operation Center) are clearly outlined in CLEC Handbook II, Section 5.3, allowing the CLEC to contact the appropriate help desk to address and remedy exceptions.
POP-4-16	Documents provide useful contact lists and help desk numbers.	Satisfied	The CLEC Handbook and CLEC contact lists on Bell Atlantic's wholesale website provide complete process descriptions, contact lists and help desk numbers. Help Desks described in Section 5.3 of the CLEC Handbook Volume II include: BASS (Bell Atlantic System Support, Bell Atlantic Web GUI Business Help Desk, Bell Atlantic RETAS Help Desk, and the TISOC (Telecom Industry Services Operation Center). A complete list of contact information is also provided for New England UNE Loop Center and the UNE DSL and Premium Loop Center. An additional CLEC contact list is located on the Bell Atlantic wholesale website http://www.bell-atl.com/wholesale/html/res_escalate_clec.htm. This list also includes management levels used in the documented escalation process.

Test Cross-Reference	Evaluation Criteria	Result	Comments
	System Elements:		
POP-4-17	Documents correctly describe the setup and access of system(s).	Satisfied	Bell Atlantic Pre-Order and Order EDI Guides (LSOG 2, 3, & 4) provide information on EDI software requirements, creating an EDI trading profile with Bell Atlantic, and formatting and transmitting local service requests (LSRs) and pre-order transactions. In addition, the Local Services Common Web GUI guide correctly documents how to access and use the Web GUI to submit Pre-Order inquiries, resale, unbundled and platform LSR's. The CLEC/Resale Handbook Volume II provides graphical depictions of the connectivity options for the Web GUI and EDI. This document provides an overview of how to establish the CLEC-Bell Atlantic Relationship. Topics include discussions of the technology necessary to establish a local network, descriptions of the processes that should be used to connect with Bell Atlantic, how to become certified as a Reseller, and how to perform general ordering process steps for the services described within the document.
POP-4-18	Documents clearly define how to navigate within system(s), (e.g., use of screen prints).	Satisfied	This criterion is applicable only to the BA-MA GUI, as EDI interfaces are developed by the CLEC. KPMG Consulting's experience with Bell Atlantic's GUI and the Bell Atlantic Local Services Common Web GUI User Guide during testing indicate that the screen prints and descriptions of the process flow (submission, response, inquiries scenarios) are clear and support the user's ability to navigate through the GUI.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-4-19	Documents correctly define all data entry fields.	Satisfied	This criterion applies only to business rules documents and interface guides because their purpose is to detail data entry fields. Data entry fields are defined for all fields in all forms of the Business Rule and EDI documentation. Although instances of unclear usage and notes and conditions were uncovered in the North Order Business Rules Version 1.8.1, and Pre-Order Business Rules Version 4.1.1, these issues have been corrected.
POP-4-20	Documents clearly and accurately explain acceptable formats for data fields.	Satisfied	Acceptable formats for data entry fields are explained in Business Rule and EDI documentation. Although instances of contradictory mapping specifications for data elements were found within Pre-Order EDI Guide Versions 2.8.1 and 4.3.1 and Order EDI LSOG Mechanization Specification Version 4.3.1, these issues have been corrected. The resolution of discrepancies found within Pre-Order and Order EDI Guides has facilitated the efficient execution of pre-order and order transaction processing.
POP-4-21	Documents correctly distinguish between required and optional fields.	Satisfied	This criterion applies only to business rules documents because their purpose is to detail data entry fields, including usage. Business rule documentation contains field conditionality identifiers (e.g., required, conditional and optional) for all fields in all forms found in the pre-order and order business rules. Although several instances of missing/unclear usage commands were uncovered in the North Order Business Rules Version 1.7 and Version 1.8.1, these issues have been corrected.
POP-4-22	Documents define possible options after data entry (i.e., save, send and cancel).	Satisfied	This criterion is applicable only to the BA-MA GUI, as EDI applications are developed by the CLEC. GUI documentation defines available options after data entry, (e.g., continue, hold order, cancel, more keys- i.e., access another screen in order to enter further key values) as appropriate. This information was gained through document reviews.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-4-23	Documents adequately describe expected system responses/ outputs.	Satisfied	Pre-Order and Order Business Rule and EDI documentation describes the responses and outputs that result from a given transaction. Both LSOG 3 and 4 pre-order documentation includes response forms specific to each pre-order inquiry form in the documentation. Similarly, the LSOG 2 North Order Business Rules contain examples of acknowledgements, completion notices and Standard Error Messages (SEMs), while the LSOG 4 Order Business Rules include examples of local response forms and error forms. The LSOG 2 North Order EDI Guides contain examples of Provisioning Completion Notices, Serice Order Acknowledgement Rejections and Service Order Change Acknowledgement Rejections, while LSOG 4 Order EDI Specification contain local service responses, local service billing completions, local service provisioning completions and error messages.
POP-4-24	Documents provide adequate description of error messages and possible steps for resolutions.	Satisfied	Pre-Order and Order Documentation and the Local Services Common Web GUI Guide provides depictions of error and remarks fields and refers users to additional documentation for further clarification of error codes. Examples include. the Pre-Order, Order and Trouble Administration document; the Order Error Messages document; and the Pre-Order Error Message and Trouble Administration document on Bell Atlantic's wholesale website. The Order Messages document contains error codes for all manual and system errors and includes instructions for resolution of manual query messages. Both this document and the LSOG 4 EDI Guide provide instructions on how to resubmit orders. Similarly, the Local Services Common Web GUI Guide details the steps necessary to correct errors and edit orders for resubmission via the GUI.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			The Pre-Order Error Message and Trouble Administration document includes error codes for all systems errors and refers user to the help desk for further clarification on resolving errors found in pre-order submissions. The CLEC Handbook Volume II and the CLEC contact list on Bell Atlantic's wholesale website provide the names and numbers and descriptions of help desks (e.g., Bell Atlantic System Support, GUI Help Desk, TISOC) that can assist in resolving these and other types of issues.

E. Test Results: Work Center/Help Desk Support Evaluation (POP5)

1.0 Description

The Help Desk/Work Center Evaluation (HD/WC) was a comprehensive operational analysis designed to test the processes developed by Bell Atlantic-Massachusetts (BA-MA) for providing Operations Support Systems (OSS) support to Competitive Local Exchange Carriers (CLECs). This assistance covers pre-ordering, ordering, and provisioning activities. Basic functionality, performance, escalation procedures, management, and security were evaluated. This evaluation was conducted in two parts:

- A procedural review of BA-MA methods and procedures for performing and managing HD/WC functions;
- A subsequent analysis of HD/WC performance based on KPMG Consulting's interaction with the BA-MA Help Desks and Work Centers during the course of transaction testing.

2.0 Methodology

This section summarizes the test methodology.

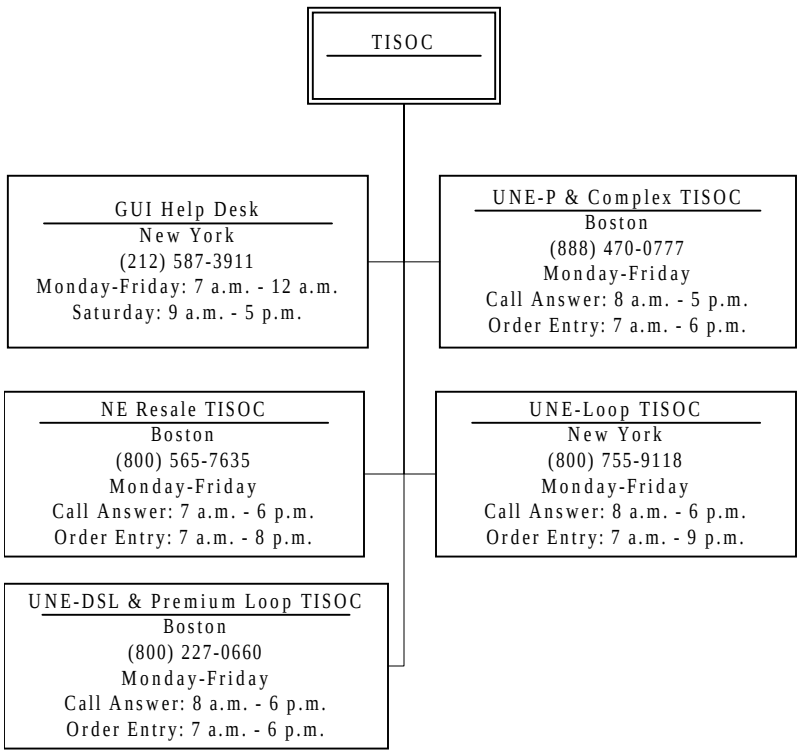
2.1 Business Process Description

To enhance understanding of the overall procedures evaluated by POP5, this report is divided into Help Desk activities and Manual Order Entry activities. Some organizations are tasked with both types of work and will be addressed in both sections.

2.1.1 Overview

The Help Desk/Work Center test focused on the Graphical User Interface (GUI) Help Desk, Telecommunications Industry Services Operations Centers (TISOCs), and Bell Atlantic Systems Support (BASS). The GUI Help Desk, also known as the North Business Help Desk, is located in New York. The TISOCs are located both in New York and Boston and aligned with a particular product (e.g., UNE-Platform, Resale) or combination of geography and product. BA-MA's Wholesale organization includes a Staff group that collects data on TISOC performance. BASS is tasked with assisting CLECs with system connectivity issues. See RM&I Tests 7 and 8 for the procedural evaluation of this organization.

The following diagram shows the structure and operating hours of the Telecommunications Industry Services (TIS) organizations relevant to this test.



2.1.2 Help Desk

The GUI Help Desk assists CLECs with business rules issues related to the creation and submission of Pre-Order and Order transactions using BA-MA's Web GUI interface. This group also assists in the interpretation of automatic error messages received by CLECs when attempting to submit a transaction. Representatives in this organization have access to the BA-MA Web GUI to view transactions in the Direct Carrier Access System (DCAS). The representatives are able to work with the CLECs' orders in real time to assist with inquiries. In addition, these representatives have access to other internal BA-MA systems (i.e., Service Order Processor [SOP], Direct Order Entry [DOE]) that enable them to view the status of an order and take actions toward resolution.

The TISOCs provide CLECs and Resellers support with issues regarding submitted orders. CLEC representatives contact the TISOC(s) directly with questions on error messages (known as "Queries" which appear as Standard Error Messages [SEM's] to CLECs) received on orders handled manually by TISOC representatives. The subject of most queries can be addressed through one of BA-MA's established "Standardized Local Service Request Query Messages." The documentation of these standard messages includes the steps necessary to resolve

the error condition. If the error found by a BA-MA representative does not fall into a standardized query, the representative includes his or her phone number and a description of the issue. When clarification is needed, the CLEC representative works with the specific BA-MA representative to resolve the issue.

When appropriate, the CLEC may be referred to a different contact within BA-MA. This could be another center (i.e., GUI HD to TISOC) or to a Subject Matter Expert (SME) outside the HD/WC. The process for this transfer is for the BA-MA representative to call the party to whom the CLEC will be transferred, explain the nature of the problem, and conference in the CLEC representative.

2.1.3 Manual Order Handling

CLEC EDI and GUI orders enter BA-MA through the Direct Customer Access System (DCAS). Once an order passes through a series of edits and is determined to be a valid transaction, an algorithm is used to determine flow-through eligibility (Level 2 or Level 5). A "Level 2" order is sent directly to the TISOC to be manually entered into the Service Order Processor (SOP) by a BA-MA representative. Level 2 orders do not flowthrough where level 5 orders do flowthrough. A potential "Level 5" order is sent to Direct Order Entry (DOE). DOE performs additional edits. An order that passes the DOE edits flows into SOP and on to the downstream provisioning systems. An order that does not pass the DOE edits is classified as "No Flow" and is sent back through DCAS to the TISOC for manual entry into SOP.

BA-MA has an additional category, "Level 4," for orders that do not flow-through but require a minimal amount of manual handling. A "Level 4" order is a "No Flow" order which falls out to the TISOC for manual handling. However, before the order is sent to the TISOC a shell of the order is established in SOP. While Level 4 transactions require less handling than Level 2 transactions, they are not true flow-through. BA-MA Level 4 transactions include Directory Listings for Unbundled Network Elements-Platform (UNE-P) and various UNE-Loop (UNE-L) transactions.

DCAS places all fallout in a "bucket" called the Unassigned bucket. A Manager in the New York UNE-Loop TISOC is assigned the task of distributing each of these orders to one of the other TISOCs or a Team Leader (First-Level Manager) in the New York TISOC. This initial distribution is based on the geography and product-type of an order. Team Leaders in each TISOC assign orders to individual Service Representatives based on workloads. Assignment is accomplished by moving an order to a different DCAS bucket. The Service Representative processes orders so that Local Service Confirmations (LSCs), also known as a Firm Order Commitments (FOCs), are returned to the CLEC within the committed time (24 or 72 hours, depending on order type) after BA-MA receives the order.

BA-MA work centers and Help Desks have process improvement procedures in place. These include CLEC feedback, internal improvement meetings, and team communications. CLECs are able to submit concerns and comments through a designated form on the Web GUI or directly to a TISOC manager. BA-MA managers have monthly meetings with the DCAS development team to offer suggestions for improving flow-through and usability of the system. Managers are able to communicate changes to representatives through "Features," Lotus Notes messages, and changes to on-line documentation.

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets and Measures

The test target was the support provided to users of BA-MA's OSS and the processing of orders requiring manual handling. Processes, sub-processes, evaluation measures, and associated test cross-reference numbers are summarized in the following table. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in Section 3.1 "Results & Analysis."

2.3.1 Pre-Ordering

Table 5-1: Test Target Cross-Reference: Pre-Ordering

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Follow up on delayed Pre-Order activities	Contact pre-ordering work center help desk	Timeliness of answer Availability of support	POP-5-6, POP-5-8, POP-5-11
Follow up on delayed Pre-Order activities	Request status of response	Timeliness of response	POP-5-8
		Accuracy and completeness of response	POP-5-7
Follow up on delayed Pre-Order activities	Escalate request for information	Accuracy and completeness of procedures	POP-5-14
		Compliance to procedures	POP-5-14
Request pre-order transaction population support	Contact appropriate work center or help desk	Timeliness of answer	POP-5-6
		Availability of support	POP-5-3, POP-5-6

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Request pre-order transaction population support	Ask question	Timeliness of response	POP-5-8
		Accuracy and completeness of response	POP-5-7
Request pre-order error correction support	Contact appropriate work center or help desk	Timeliness of answer	POP-5-6
		Availability of support	POP-5-3, POP-5-6
	Ask question	Timeliness of response	POP-5-8
		Accuracy and completeness of response	POP-5-7
		Accuracy and completeness of help desk information	POP-5-3, POP-5-4, POP-5-7, POP-5-9

2.3.2 Order Processing Support

Table 5-2: Test Target Cross-Reference: Ordering

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Follow up on delayed order activities	Contact ordering work center help desk	Timeliness of answer	POP-5-6
		Availability of support	POP-5-3, POP-5-11
Follow up on delayed order activities	Request status of response	Timeliness of response	POP-5-6
		Accuracy and completeness of response	POP-5-7
Follow up on delayed order activities	Escalate request for information	Accuracy and completeness of procedures	POP-5-14
		Compliance to procedures	POP-5-14
Follow up on delayed order activities	Monitor closure of request	Completeness and accuracy of follow-up	POP-5-9
		Timeliness of answer	POP-5-8
Request order population support	Contact appropriate work center or help desk	Availability of support	POP-5-3, POP-5-6
Request order population support	Ask question	Timeliness of response	POP-5-8
		Accuracy and completeness of response	POP-5-7

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Request order error correction support	Contact appropriate work center or help desk	Timeliness of answer	POP-5-6
		Availability of support	POP-5-3, POP-5-6
Request order error correction support	Ask question	Timeliness of response	POP-5-8
		Accuracy and completeness of response	POP-5-7

2.3.3 Provisioning Support

Table 5-3: Test Target Cross-Reference: POP Work Center/Help Desk Support

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Respond to Help Desk Call	Answer call	Timeliness of call	POP-5-6
Respond to Help Desk Call	Interface with user	Usability of user interface Availability of user interface	POP-5-2, POP-5-3, POP-5-17, POP-5-11
Respond to Help Desk Call	Log call	Accuracy and completeness of call logging Accuracy of call logging	POP-5-9, POP-5-12
Respond to Help Desk Call	Record severity code	Compliance of call logging - severity coding	POP-5-10
Process Help Desk Call	Resolve user question, problem, or issue	Completeness and consistency of process Accuracy of response	POP-5-1 POP-5-7
Process Help Desk Call	Record follow-up is required	Accuracy and constancy of process	POP-5-9
Process Help Desk Call	Follow-up on commitments	Measurability of adherence to response time Complete and accurate follow-up	POP-5-18, POP-5-19
Close Help Desk Call	Post closure information	Completeness, consistency, and timeliness of process Accuracy of posting	PPOP-5-13, POP-5-12
Monitor Status	Track status	Accuracy and completeness of status tracking capability	POP-5-13

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
		Consistency and frequency of follow-up activities	
		Availability of jeopardy notification	
Monitor Status	Report status	Completeness and consistency of reporting process	POP-5-14
		Accuracy and timeliness of report	
		Accessibility of status report	
Request Escalation	Identify escalation procedure	Accuracy and completeness of procedure	POP-5-15
	Evaluate escalation procedure	Completeness of the procedure	
		Consistency of the process	
Provide Security and Integrity	Provide secured access	Completeness and applicability of security procedures, profiles, and restrictions	POP-5-16
		Controllability of intra-company access	
Manage the Help Desk Process	Provide management oversight	Completeness and consistency of operating management practices	POP-5-1, POP-5-3, POP-5-4, POP-5-5, POP-5-18, POP-5-19, POP-5-20, POP-5-20, POP-5-21, POP-5-23, POP-5-26, POP-5-27
		Controllability, efficiency and reliability of process	
		Completeness of process improvement practices	

2.3.4 Manual Order Processing

Table 5-4: Test Target Cross-Reference: POP Work Center/Help Desk Support

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Receive Manual Order	Faxed Manual Order Logging	Completeness and consistency of log	POP-5-22
	Electronic Manual Order Logging	Completeness and consistency of log	POP-5-22
Process Manual Order	Entry of Manual Order into SOP	Completeness and consistency of process	POP-5-21
Status Tracking and Reporting	Status Tracking and Reporting	Completeness and consistency of reporting process	POP-5-22, POP-5-23, POP-5-24
Problem Escalation	User-Initiated Escalation	Completeness and consistency of process	POP-5-23
Process Management	General Management Practices	Completeness and consistency of management practices	POP-5-21, POP-5-22
	Performance Measurement Process	Controllability, efficiency and reliability of process	POP-5-26,
	Process Improvement Processes	Completeness of process improvement practices	POP-5-23, POP-5-27
TISOC Processes non-flowthrough order	TISOC representative creates SEM manually.	Timeliness of manually created SEM	POP-5-28
TISOC Processes non-flowthrough order	TISOC representative creates SEM manually.	Accuracy of manually created SEM	POP-5-29
TISOC Processes non-flowthrough order	TISOC representative validates and corrects information on LSR and issues service order in SOP manually; LSC is returned by system.	Timeliness of LSC on order that required manual intervention	POP-5-30

2.3.5 Work Center Capacity Management

Table 5-5: Test Target Cross-Reference: POP Work Center/Help Desk Support

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Manage Workforce Capacity	Identify workforce planning procedure	Completeness of procedure	POP-5-25, POP-5-26, POP-5-27
	Examine data collection procedures	Completeness of procedures	
	Review data analysis procedures	Completeness of procedures	

2.4 Data Sources

The sources of data for this test include all the data that was available to the team in performing the test.

2.4.1 Data Collection

KPMG Consulting collected documentation from BA-MA relating to TISOC and GUI Help Desk Processes. KPMG Consulting also developed documents while conducting the test. Specific sources are listed in the following table.

Table 5-6: BA-MA Data Collected for Evaluation

Document	File Name	Location in Work Papers	Source
Summary of UNE-Loop TISOC Manager Interview	NY UNE TISOC Mgr Interview Summary_1.doc	POP-5-A-1	KPMG Consulting
Response to NY UNE-Loop TISOC Manager Interview Summary	NY UNE TISOC Mgr Interview Summary_1-resp.doc	POP-5-A-2	BA-MA
Summary of GUI Help Desk Interview	GUI Help Desk Interview Summary.doc	POP-5-A-3	KPMG Consulting

Document	File Name	Location in Work Papers	Source
Response to GUI Help Desk Interview Summary	GUI Help Desk Interview Summary_2-resp.doc	POP-5-A-4	BA-MA
Summary of UNE-Loop TISOC Interview	NY UNE TISOC Interview Summary_2.doc	POP-5-A-5	KPMG Consulting
Response to NY UNE TISOC Interview Summary	NY UNE TISOC Interview Summary_2-resp.doc	POP-5-A-6	BA-MA
Summary of UNE-DSL and Premium Loop TISOC Interview	UNE-DSL Interview Summary.doc	POP-5-A-7	KPMG Consulting
Response to UNE-DSL Interview Summary	UNE-DSL Interview Summary-resp.doc	POP-5-A-8	BA-MA
Summary of UNE-P & Complex TISOC Interview	UNE-P & Complex Interview Summary.doc	POP-5-A-9	KPMG Consulting
Response to UNE-P Complex Interview Summary	UNE-P Complex Interview Summary_2-resp.doc	POP-5-A-10	BA-MA
Summary of TISOC Director Interview	TISOC Director Interview Summary.doc	POP-5-A-11	KPMG Consulting
Response to TISOC Director Interview	TISOC Director Interview Summary-resp.doc	POP-5-A-12	BA-MA
Summary of NE UNE-Loop TISOC Interview	NE UNE-Loop TISOC Interview Summary_1.doc	POP-5-A-13	KPMG Consulting
Summary of Resale Services TISOC Interview	Resale Services Interview Summary.doc	POP-5-A-14	KPMG Consulting
Response to Resale Services Interview Summary	Resale Services Interview Summary-resp.doc	POP-5-A-15	BA-MA

Document	File Name	Location in Work Papers	Source
Extract from GUI Help Desk Lotus Notes database	GUI Call Log.mdb	POP-5-A-16	BA-MA
GUI Help Desk Automatic Call Distributor (ACD) Reports	Hard Copy	POP-5-A-17	BA-MA
Blank GUI Help Desk Representative evaluation form	GUI SUPPORT DESK Rep Evaluation Form.doc	POP-5-A-18	BA-MA
List of TISOC Team Leaders and the products they handle; provided to GUI Help Desk Reps	Hard Copy	POP-5-A-19	BA-MA
Filled-out GUI Help Desk call tracking forms	Hard Copy	POP-5-A-20	BA-MA
GUI Help Desk Organization chart	Hard Copy	POP-5-A-21	BA-MA
Individual call sheet for UNE-Loop reps	Hard Copy	POP-5-A-22	BA-MA
Daily UNE-Loop Representative performance sheet	Hard Copy	POP-5-A-23	BA-MA
UNE-Loop Organization chart	NY UNE-L Orgchart.ppt	POP-5-A-24	BA-MA
Example UNE-Loop ACD Reports	Decasany.xls Janasany.xls Febasany.xls	POP-5-A-25	BA-MA
Example UNE-P ACD reports	Decasany.xls Janasany.xls Febasany.xls	POP-5-A-25	BA-MA
Interval chart provided to UNE-P Service Reps	UNE-P Interval Summary.doc	POP-5-A-33	BA-MA
Resale TISOC ACD Reports	Hard Copy	POP-5-A-26	BA-MA
UNE-P and Complex Organization Chart	UNE-P Headcount.XLS	POP-5-A-34	BA-MA
Resale TISOC Organization chart	Hard Copy	POP-5-A-27	BA-MA
List of Lotus Notes databases available to Resale TISOC reps	Hard Copy	POP-5-A-28	BA-MA
UNE-DSL TISOC PON Qualification Process	UNE-DSL Digital1.doc	POP-5-A-35	BA-MA

Document	File Name	Location in Work Papers	Source
Resale Services Quality Review Summary Record	Hard Copy	POP-5-A-29	BA-MA
UNE-DSL TISOC USOC guide used for order entry	UNE-DSL Mask1.xls	POP-5-A-36	BA-MA
Resale Services TISOC FLEXPATH Case File	Hard Copy	POP-5-A-30	BA-MA
UNE-DSL TISOC Numbers kept internally regarding "Loop-Qual C" orders	UNE-DSL LQC.xls	POP-5-A-37	BA-MA
Blank Resale Services TISOC Case History Sheet	Hard Copy	POP-5-A-31	BA-MA
UNE-DSL TISOC Organization Chart	UNE-DSL Org2000.xls	POP-5-A-38	BA-MA
UNE-P WFA/DCAS Printout	Hard Copy	POP-5-A-32	BA-MA
Summary of CLEC A Interview	CLEC A Interview Summary.doc	POP-5-A-39	KPMG Consulting
Summary of CLEC B Interview	CLEC B Interview Summary.doc	POP-5-A-40	KPMG Consulting
Summary of CLEC C Interview	CLEC C Interview Summary.doc	POP-5-A-41	KPMG Consulting
Switched Access Training Tutorial (BR91057)	Hard Copy	POP-5-B-1	BA-MA
Introduction to UNE Systems Student Guide (BR92080)	Hard Copy	POP-5-C-1	BA-MA
Local Number Portability Student Guide (BR91790)	Hard Copy	POP-5-D-1	BA-MA
Unbundled Local Loop Student Guide (BR90990)	Hard Copy	POP-5-E-1	BA-MA
Analysis of Help Desk Experience	Call Pick-up and Resolution Analysis.xls	Soft Copies Binder	KPMG Consulting
KPMG Consulting Help Desk Log	Help Desk.mdb	Soft Copies Binder	KPMG Consulting
Data Collected for Capacity Management	TISOC_Actuals_North (2-3-00) (Capacity Management).XLS	Soft Copies Binder	BA-MA

Document	File Name	Location in Work Papers	Source
Capacity Management Algorithms	TISOC_Actuals_ North (2-3-00) (Capacity Management).XLS	Soft Copies Binder	BA-MA
Bell Atlantic Order Error Messages, May 2000	ERRMSGJUNE_ ORDER.pdf	Engagement File Work Papers	BA-MA

2.4.2 Data Generation

Data for this test was generated by the transaction team during the course of submitting transactions for POP1 and POP2. As errors were received on submitted orders, the KPMG Consulting Help Desk process captured data on interactions with the support organizations.

2.5 Evaluation Methods

Procedural Review

The procedural review employed operational analysis techniques to evaluate processes. KPMG Consulting reviewed BA-MA documentation, interviewed BA-MA personnel regarding established procedures, observed the operations of the various HDs/WCs, and interviewed CLECs regarding performance and procedural issues.

The methodology for conducting the HD/WC procedural evaluation consisted of interviews with BA-MA personnel responsible for both order entry and support functions; direct observation of Help Desk processes in both the GUI Help Desk and the TISOCs; direct observation of Manual Order Handling processes in the TISOCs; analysis of BA-MA documentation; and solicitation of input from CLECs on HD/WC performance.

KPMG Consulting conducted structured interviews with BA-MA using guides generated from the evaluation criteria. KPMG Consulting observed BA-MA processes using an observation target checklist also constructed from the evaluation criteria. Internal BA-MA documentation was also reviewed.

KPMG Consulting solicited CLEC feedback on BA-MA HD/WC performance and observations of interactions with BA-MA HD/WC's. KPMG Consulting conducted interviews with personnel involved in Pre-Ordering, Ordering, and Provisioning activities. KPMG Consulting recorded the work centers the CLEC contacts, the CLEC's description of both the support and order entry procedures followed by BA-MA, and the CLEC's qualitative assessment of the support provided by BA-MA.

CLECs interviewed by KPMG Consulting contact three BA-MA support organizations: the TISOC, BASS, and the GUI Help Desk. The TISOC is contacted most frequently with questions about outstanding orders or query messages. BASS is used for resolving connectivity issues as well as a point of entry when the correct center to contact is not clear. In such instances, BASS

will follow the established "hot transfer" procedure to connect the caller with the correct organization.

Performance Review

The performance review relied on qualitative and quantitative analysis of data collected during production testing. KPMG Consulting designated an internal Help Desk (HD) Manager to serve as the single point of contact with BA-MA support organizations. All questions related to Pre-Order and Order error messages and order status were referred to the KPMG Consulting HD Manager. The Manager then contacted the appropriate BA-MA support organization as necessary. KPMG Consulting documented and logged all interactions with BA-MA. The HDs/WCs were evaluated for initial responsiveness and issue resolution timeliness and accuracy.

The performance of BA-MA's support organizations was evaluated through examination of issue-specific data collected during production testing. This data included the Purchase Order Number (PON), a description of the issue, the organization contacted, the BA-MA recipient of the call, a ticket number if assigned, time spent on hold before call-pickup, the length of the call, and the resolution of the issue. If the issue was not resolved during the first call to the HD/WC, the length of time to resolve the issue was recorded. After the issue was resolved, the HD Manager assigned a reason code. The resolution was also communicated to the testing team so that further action could be taken.

2.6 Analysis Methods

The Work Center/Help Desk Support Evaluation included a checklist of evaluation criteria developed by the test manager during the initial phase of the Bell Atlantic-Massachusetts OSS Evaluation. These evaluation criteria, detailed in the *Master Test Plan*, provided the framework of norms, standards, and guidelines for the Work Center/Help Desk Support Evaluation.

The data collected were analyzed employing the evaluation criteria referenced above.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results and Analysis

The following table summarizes the evaluation criteria, the associated test cross-reference, the test results, and supporting comments.

Table 5-7: POP5 Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-5-1	The Help Desk responsibilities and activities are defined.	Satisfied	The GUI Help Desk is responsible for assisting CLECs in interpreting error messages and populating orders when using the BA-MA-provided Web GUI interface. The TISOC is responsible for assisting CLECs with questions about orders which have already been accepted by BA-MA's systems. CLECs can contact the TISOC for information on the status of an order, clarification of SEMs or Queries, escalations, or expedite requests. These responsibilities are detailed in Section 5.3, Volume II of CLEC/Resale Handbook Series.
POP-5-2	The scope of HD services covers customer requirements.	Satisfied	Submitting an order to BA-MA has three steps: pre-order activities, submission of a valid order, and order confirmation. BA-MA's support organizations offer support during each of these phases. The GUI HD and the TISOCs answer questions occurring before writing an order, after an error has been received, and after an order has been successfully submitted.
POP-5-3	The scope and objectives of the HD are defined, documented, and communicated to customers.	Satisfied	The scope and objectives for each support or manual work center are described in the CLEC/Resale Handbook Series. Section 5.3 of Volume II contains scope, procedures, hours of operation, and basic contact information for each organization. Changes to the Help Desk procedures are communicated through standard change control channels. BA-MA also conducted several workshops, during which CLEC input was solicited, regarding changes to be made to the Help Desk organizations.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-5-4	A complete description of the HD process is documented.	Satisfied	HD processes are described in several BA-MA sources. Section 5.3 of the CLEC/Resale Handbook, Volume II explains the responsibilities of both the Help Desks and the TISOCs. It also lists hours of operations and contact numbers for each center. Section 8.1 of CLEC Handbook, Volume I details contact information for each step of the established escalation procedure. The "Contact Us" tab on BA-MA's Wholesale Services Website provides (http://www.bellatlantic.com/wholesale/html/contact.htm) links to comprehensive escalation and contact lists for both Resellers and CLECs. Changes to the processes are communicated through standard BA-MA Change Control channels.
POP-5-5	The process includes procedures for addressing errors and exceptions.	Satisfied	The processes in all centers include provisions for unusual occurrences. Representatives escalate exceptions to their managers as they occur. This process is documented on BA-MA's Wholesale Services website (http://www.bellatlantic.com/wholesale/html/res_escalate_clec.htm).
POP-5-6	The HD is responsive to telephone calls.	Satisfied	BA-MA's Help Desks and work centers answer calls in a timely manner. For the calls placed by the HD Manager the average time between call origination and BA-MA answer supervision was 25 seconds; 84% of calls placed were answered within 30 seconds. BA-MA's Carrier-to-Carrier Guidelines include a standard of 80% of calls answered within 30 seconds (PO-3 Contact Center Availability).[73] KPMG Consulting was unable to capture data to replicate this measure as it is defined and reported.

[73] The standard defined in PO-3 of BA-MA Carrier-to-Carrier Guidelines applies only to the TISOCs.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-5-7	The information provided by the HD is accurate.	Satisfied	All issues referred to BA-MA's HD were resolved. KPMG Consulting's experience was that troubleshooting was an iterative process which frequently required multiple calls between BA-MA and KPMG Consulting.
POP-5-8	The HD provides timely resolution of issues.	Satisfied	BA-MA resolved the majority of issues quickly; the average time from notifying BA-MA of an issue to receiving a resolution was four days while 61% were resolved within two days of BA-MA notification. There is no standard defined in the Carrier-to-Carrier guidelines for the resolution of issues.
POP-5-9	The process includes complete and consistent call intake procedures (logging and acknowledgment).	Satisfied	The procedures for recording an incoming call at the GUI Help Desk are complete and consistent. During the call answer process, representatives collect the following information: name of the caller, date and time of the call, reason for the call, and name of the representative taking the call. Additional details, such as the PON in question, caller's RSID/AECN, or UserID of the caller, may be captured when necessary. The manager and representatives can view tickets by Open vs. Closed, Representative, date of call, resolution, or reason for a call. Work conducted on a particular PON by TISOC representatives is tracked in the Case Profile History (CPH) section of DCAS. Calls accepted by TISOC representatives are tracked on paper log sheets or in the CPH. Calls placed to an 800 number are tracked by the Automatic Call Distributor (ACD) for timeliness purposes.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-5-10	The HD process defines criteria and procedures for severity coding HD calls.	N/A	This is not a requirement of the GUI Help Desk. GUI Help Desk issues are prioritized by time of receipt. BASS uses severity codes to indicate the impact of system outages and problems. When a system-outage-related CLEC issue is directed to the GUI HD, the CLEC is transferred to the BASS where standard recovery procedures, including a severity assessment, are invoked. See POP-5-11 for details on the hot-transfer procedure.
POP-5-11	The HD includes procedures for referral (into and out of HDs.	Satisfied	When a CLEC chooses the wrong center to call, or additional assistance is required, the call recipient will be connected with the correct number, explain the problem, and conference in the caller. This process was described and demonstrated during BA-MA site visits. The KPMG Consulting Help Desk Manager also observed this procedure during production testing.
POP-5-12	The process includes complete and consistent procedures for closure posting.	Satisfied	The procedures for closing a GUI Help Desk ticket are complete and consistent. To close a ticket, the representative must record the date of closure and the issue resolution in the call tracking database. The closing of a TISOC call issue is not explicitly posted or tracked. Because the TISOC deals only with accepted PONs, resolution is indicated by the status (queried or confirmed) of the PON.
POP-5-13	The process includes complete and consistent procedures for status tracking and management reporting.	Satisfied	The GUI HD tracks incoming calls both through an ACD and an internal database. See POP-5-9 for details of the information captured during a call. The GUI HD manager or representatives have a view of the database by Open vs. Closed. This is used to judge the performance of their issue resolution duties. The GUI HD manager receives periodic ACD reports on the details of call answer performance. TISOC managers receive similar reports on call answer data. The TISOC's issue resolution duties are not formally tracked.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-5-14	The process includes complete and consistent procedures for escalating user issues / problems.	Satisfied	Escalation procedures for involving management levels in customer issues are documented for both CLECs and HD/WC Representatives. The "Bell Atlantic Escalation Process for CLECs" section of BA-MA's Wholesale Services website (http://www.bellatlantic.com/wholesale/html/res_escalate_clec.htm) describes the escalation process and provides a link to contact lists for the various support organizations. The documented process defines responsibilities for both BA-MA and the CLEC and committed response times.
POP-5-15	The process includes complete and consistent procedures for capacity planning.	Satisfied	This test examined those BA-MA capacity planning procedures applicable to Help Desk and Manual Order Processing organizations. BA-MA's capacity models forecast resource requirements based on future workloads, productivity, current experience, industry trends, and CLEC-provided forecasts.
POP-5-16	The process includes procedures for maintaining security and integrity of data access controls.	Satisfied	BA-MA's systems incorporate UserID's and passwords, SecurID's, and firewalls to secure access. GUI HD representatives use the CLEC's UserID to view GUI orders with read-only access. All BA-MA buildings utilize badged access controls.
POP-5-17	The HD's interfaces are easy to use.	Satisfied	The primary interface to all organizations is via phone. The appropriate numbers are available to CLECs through the Handbook Series (Section 5.3 of Volume II) and the Wholesale Services Website (http://www.bellatlantic.com/wholesale/html/con_clec_list.htm).
POP-5-18	The process performance measures are defined and measured.	Satisfied	The TISOCs' internal performance standard is to return 100% of all LSCs or SEMs to CLECs within the established timeframe. BA-MA personnel are evaluated by comparing actual performance to this standard. The process is measured by the Staff organization and reported to the Director and to the Manager of each center.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-5-19	The responsibilities for tracking HD performance are assigned.	Satisfied	The responsibility for tracking the GUI Help Desk's performance is assigned to the Manager of the Help Desk. The performance of HD responsibilities in the TISOCs is not evaluated or tracked.
POP-5-20	The process improvement procedures are defined and responsibilities are assigned.	Satisfied	The responsibility for improving the process is assigned to the Manager of each center. Managers receive on-going feedback from representatives on the process and from CLECs through direct comments or solicited through the a form on the GUI. Changes to processes can be communicated through "Features," Lotus Notes messages, and/or M&P changes. Examples of Features are: ♦ A Job Aid for writing reverse-trigger orders; ♦ A reminder and Job Aid about ensuring an order reaches the Work step.
POP-5-21	Manual Processes are defined and documented for faxed and electronic manual orders.	Satisfied	The TISOCs have a Methods document for each product. Examples of the M&P's are: ♦ Local Number Portability; ♦ Unbundled Loops For Certified Local Exchange Carriers (CLEC); ♦ The documents are accessible through Lotus Notes and hard copy. Additional Job Aids are distributed through Features and Notes messages.
POP-5-22	Internal ownership of manual orders is delineated and tracked through the process.	Satisfied	Once an order has been assigned to a service representative, that representative is responsible for sending the CLEC an LSC (FOC) or query. This ownership is tracked through the supervisor view of DCAS; individuals with this level of access can determine who has a PON and when it was assigned. When a CLEC inquires about ownership of a PON, the representative answering the call can use a Manager's terminal to determine to whom the PON has been assigned.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-5-23	The process includes clear procedures for tracking performance, addressing errors, escalating problems, and resolving exceptions.	Satisfied	TISOC order processing performance is tracked by the Staff organization. The GUI HD Manager measures performance of issue resolution through the Lotus Notes call tracking database. The TISOC and GUI HD managers also measure call answer performance using ACD-generated reports. There is no measure of the time to resolve an issue in the TISOCs. Errors are addressed in the M&P documents used by representatives in each center. Escalations follow the procedure documented on BA-MA's Wholesale Services website (http://www.bellatlantic.com/wholesale/html/res_escalate_clec.htm).
POP-5-24	Complete and consistent order intake logs are present and up-to-date.	Satisfied	Order intake logging is accomplished by DCAS. Details on an orders history are tracked through use of the CPH in DCAS to record details of order activity. Call intake logging in the GUI HD is accomplished through a database. See POP-5-9 for the description of this database.
POP-5-25	Capacity is available to scale for unexpected demand peaks.	Satisfied	To determine TISOC staffing needs, the Staff organization takes into consideration a number of factors: representative productivity, actual number of orders received by BA-MA, and CLEC forecasts. TISOC representatives are eligible for overtime and may be required to work additional hours to ensure completion of all work. BA-MA maintains a contract with an external organization to provide extra capacity when needed. This center can process non-complex orders when loads exceed BA-MA's internal capacity. Representatives are cross-trained on products not specific to their centers; this allows load-sharing within or between jurisdictions.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-5-26	Process status is being tracked and reported to management.	Satisfied	The status of the process is tracked both internally and by the Staff organization. The performance of the process is the primary criterion for evaluating management performance.
POP-5-27	Capacity planning tools are operational.	Satisfied	Inputs used to determine required capacity are the quantity of orders being received by BA-MA, flowthrough rates, worker productivity, manager spans of control, and CLEC forecasts. The algorithms BA-MA uses to determine required resources are coded in an internal Excel workbook. Examples of recent changes due to capacity plans are the establishment of new TISOC centers and the hiring of new representatives.
POP-5-28	TISOC issues SEMs in a timely manner.	Satisfied	The TISOC issued SEMs in a timely manner during the testing interval beginning on May 11, 2000 and ending on June 30, 2000. An analysis of manual queries received by KPMG Consulting revealed that the TISOC had satisfied the C2C OR-2 Reject Timeliness standard of 95% on time.[74]
POP-5-29	TISOC issues SEMs that are accurate.	Satisfied	KPMG Consulting received correct TISOC-issued SEMs during the testing period. During the test period KPMG Consulting received a total of 206 manual SEMs. 198 (96%) were correctly processed by the TISOC.
POP-5-30	LSCs on non-flowthrough orders are returned in a timely manner.	Satisfied	KPMG Consulting received LSCs on non-flowthrough orders in a timely manner during the testing period. An analysis of LSC's received on non-flow-through orders revealed that BA-MA met the C2C OR-1 Order Confirmation Timeliness standard of 95% on time.[74]

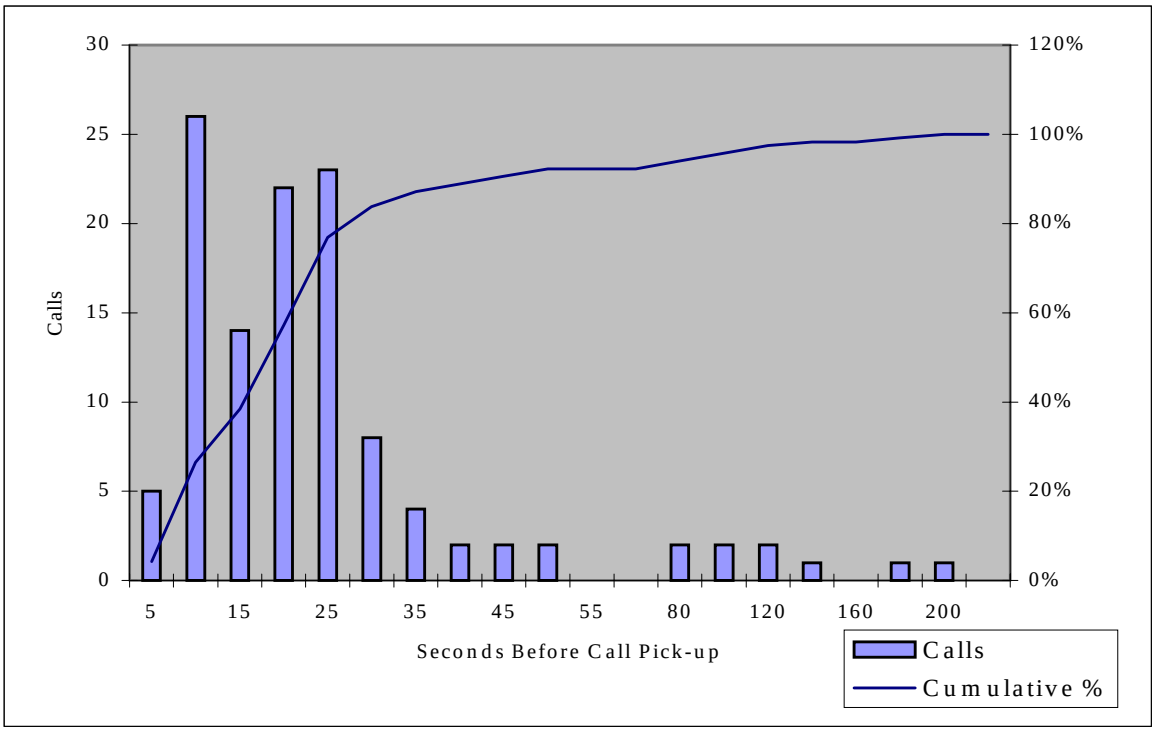
[74] "On Time" is defined as 24 hours for non-complex orders with <=10 lines and 72 hours for complex or >10-line orders. This standard applies to both SEMs and LSCs.

Performance Results

Help Desk

During the course of transaction testing KPMG Consulting's Help Desk Manager placed 117 calls to BA-MA support organizations. For each of these calls, the time of call origination and call pick-up by a BA-MA representative were captured. Because Call Answer Timeliness, as defined in BA-MA's Carrier-to-Carrier Guidelines, does not start measurement until the call reaches a BA-MA ACD, the interval measured by KPMG Consulting will exceed that specified in the Guidelines because it begins at call origination. All data and analysis included in this report uses the actual interval measured by KPMG Consulting (origination to pick-up). As detailed in the figures below, 98 (84%) of calls were answered within 30 seconds.

Figure 5-1: Distribution of Call Pick-up Times



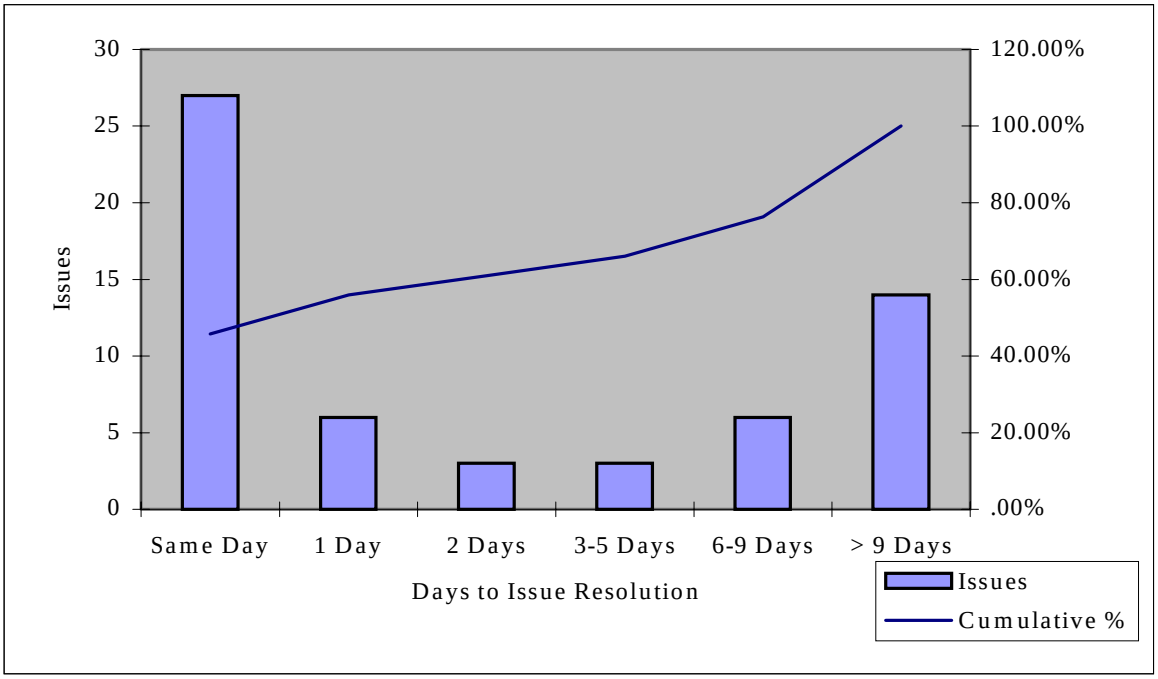
The average time between actual dial and pick-up, as detailed in the table below, was 25.36 seconds.

Table 5-8: Details of Call Pick-up

Center	Data	<= 30 sec.	> 30 sec.	Total
BASS	Number of Calls	60	13	73
	% w/in 30 seconds	82.19%	17.81%	100.00%
	Average Pick-up Time	15.27	69.00	24.84
TISOC	Number of Calls	35	6	41
	% w/in 30 seconds	85.37%	14.63%	100.00%
	Average Pick-up Time	17.09	87.50	27.39
GUI HD	Number of Calls	3	0	3
	% w/in 30 seconds	100.00%	0.00%	100.00%
	Average Pick-up Time	10.33	N/A	10.33
Total Number of Calls		98	19	117
Total % w/in 30 seconds		83.76%	16.24%	100.00%
Total Average Pick-up Time		15.77	74.84	25.36

During the course of production testing, KPMG Consulting referred 59 issues to BA-MA support organizations (TISOCs, BASS, GUI HD). Each issue may have required several calls between KPMG Consulting and BA-MA and/or contact with more than one organization. For example, one call placed to the GUI HD regarding an error received through EDI was transferred to BASS. BA-MA was able to resolve most (61%) of KPMG Consulting's issues within 2 business days of KPMG Consulting requesting assistance. The following graph details the distribution of resolution times.

Figure 5-2: Distribution of Issue Resolutions



Issues requiring BA-MA contact included SEM responses to LSRs, error responses to Pre-Order transactions, no responses, and other reasons. A number of BA-MA systems required a software fix to correct the problem. In these cases, the issue was considered open until the fix had been implemented and successfully tested. The following table details the amount of time issues remained open for each reason code assigned by the KPMG Consulting HD Manager.

Table 5-9: Details of Issue Resolution Times[1]

Resolution Interval[2]	Error Reason										Total	
	KPMG Consulting		BA-MA System		BA-MA Documentation		BA-MA Human Error		Other			
	Issues	%	Issues	%	Issues	%	Issues	%	Issues	%	Issues	%
Same Day	15	65%	6	32%	1	17%	7	78%	1	50%	30	51%
1 Day	2	9%	1	5%	0	0%	0	0%	0	0%	3	5%
2 Days	2	9%	1	5%	0	0%	0	0%	0	0%	3	5%
3-5 Days	0	0%	0	0%	4	67%	0	0%	0	0%	4	7%
6-9 Days	4	17%	3	16%	1	17%	2	22%	1	50%	11	19%
> 9 Days[3]	0	0%	8	42%	0	0%	0	0%	0	0%	8	14%
Total	23	100%	19	100%	6	100%	9	100%	2	100%	59	100%

[1] Not all reason codes were represented among the issues referred to BA-MA

[2] In business days

[3] Range includes 11 to 33 days

F. Test Results: Provisioning Process Parity Evaluation (POP6)

1.0 Description

The Provisioning Process Parity Evaluation is a review of the Bell Atlantic-Massachusetts (BA-MA) processes, systems, and interfaces that provide provisioning for Competitive Local Exchange Carrier (CLEC) and Reseller orders. The focus of the evaluation is on the activities from the point the order is entered into the Bell Atlantic Service Order Processor (SOP) through the "downstream" systems, interfaces and processes to the point of service activation. The SOP is the system that controls the service order flow. "Assignment" is the BA-MA process of assigning the telephone number/s, office equipment and facilities required for the service ordered; "Translation" is the programming of the service and features in the switch; and Dispatch/Service Activation is the point where all items have been combined to provide the requested service. These three areas are included in the POP6 evaluation.

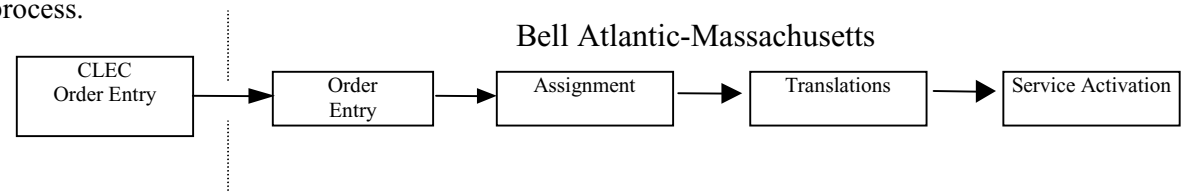
The objective of this test is to evaluate the degree to which the provisioning environment supporting wholesale orders demonstrates parity within the provisioning environment for (BA-MA) retail orders.

2.0 Methodology

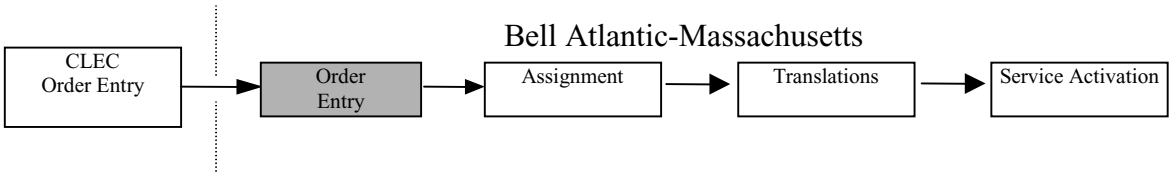
This section summarizes the test methodology.

2.1 Process Description

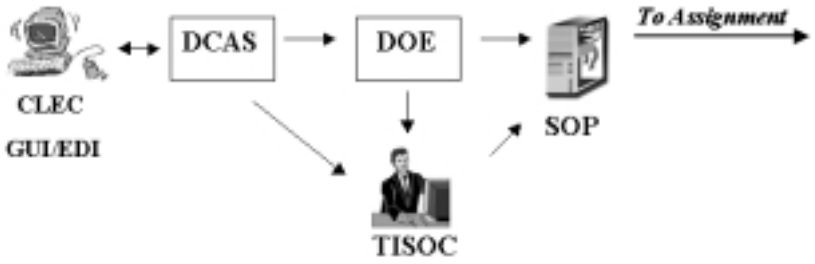
Orders received from the CLECs go through service order entry into the (SOP) and continue to the point of service activation. The diagram below depicts the overall wholesale provisioning process.



2.1.1 Order Entry Process



The diagram below depicts the Wholesale Order Entry Process.



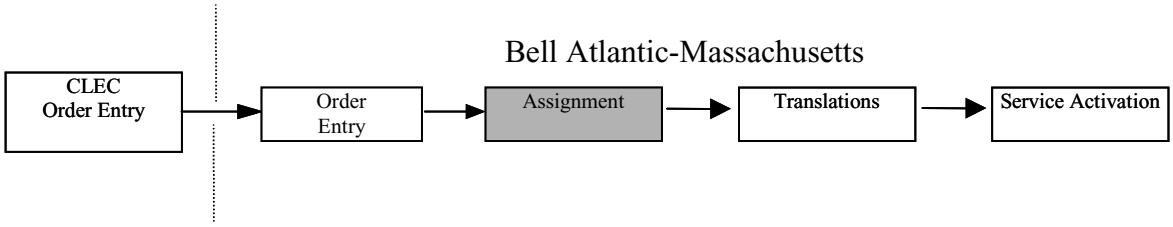
Orders submitted by CLECs through the GUI or the EDI interfaces flow into the Direct Carrier Access System (DCAS). Information in DCAS will flow to the Direct Order Entry system (DOE) and on to the Service Order Processor (SOP). Orders flowing through to SOP without manual intervention by a BA-MA representative are referred to as "Level 5" flow-through. Orders entered into DCAS which do not flow through to SOP require intervention by a BA-MA representative from the Telecommunications Industry Service Operations Center (TISOC). These are referred to as "non-flow-through" orders.

The TISOC is dedicated solely to wholesale order processing and has the primary responsibility for service order entry and date due negotiation.

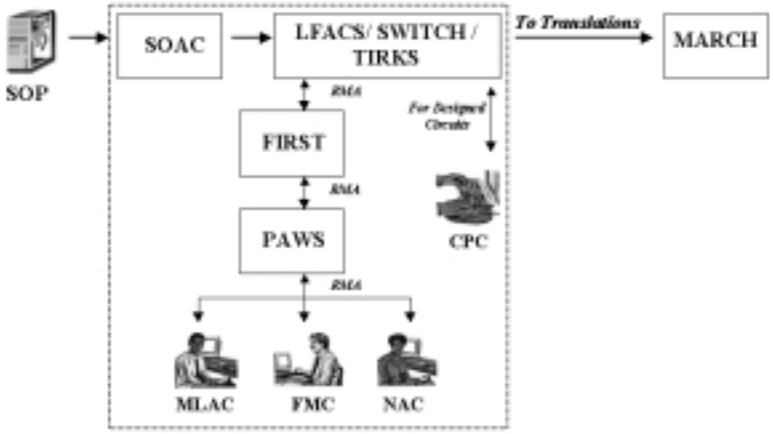
Retail service representatives from the General Business Service Center (GBSC), Large Business Service Center (LBSC), and the Major Customer Service Center (MCSC) input orders into DOE which flow into SOP. These groups are the TISOC equivalent for retail orders (although they also perform some of the sales functions).

POP6 focuses on processes after the order is entered into SOP.

2.1.2 Provisioning Process – Assignment



The diagram below depicts the Assignment process.



The assignment process involves assigning office equipment and facilities to service orders. Orders are released (flow) from SOP to the Service Order Analysis and Control (SOAC) system. SOAC controls the progress of service orders through the provisioning process, distributes the service orders to other necessary provisioning systems and returns status messages to SOP.

According to BA-MA, approximately 93% of non-complex orders flow automatically through the assignment systems, including Loop Facility Assignment and Control System (LFACS) and the inventory system SWITCH. The Mechanized Loop Assignment Center (MLAC), the Facilities Maintenance Center (FMC), and the Network Administration Center (NAC) work on the remaining seven percent of orders, which become a Request for Manual Assignment (RMA). The Circuit Provisioning Center (CPC) designs circuits and assigns them in the Trunk Information Record Keeping System (TIRKS).

FIRST is a system that reviews the RMAs before they are distributed to the appropriate work center. FIRST attempts to resolve simple RMAs and makes assignments when possible.

RMAs are routed to the appropriate center (MLAC, FMC or NAC) based on the type of error generated. The Provisioning Analyst Workstation System (PAWS) is used to monitor and distribute RMA work.

If it is determined that an RMA was caused by a service order writing error, the NAC Administrative Associates (AA) or the FMC Facility Assignor (FA) will contact the MLAC FA. The MLAC FA then will electronically return the service order for revision back to the negotiator. This is known as Error Service Order Interface (ESOI). The TISOC will then resolve the error and submit the order back into SOP.

The MLAC FAs are responsible for resolving all other assignment errors and for tracking ESOIs. In addition, the MLAC is responsible for responding to calls for assistance from the field and performing database management (e.g., cross-audits on systems such as LFACS and SWITCH) to ensure data accuracy. Processing orders can involve calling the negotiator (TISOC for wholesale and retail service representatives for retail) and fixing the LFACS or SWITCH database.

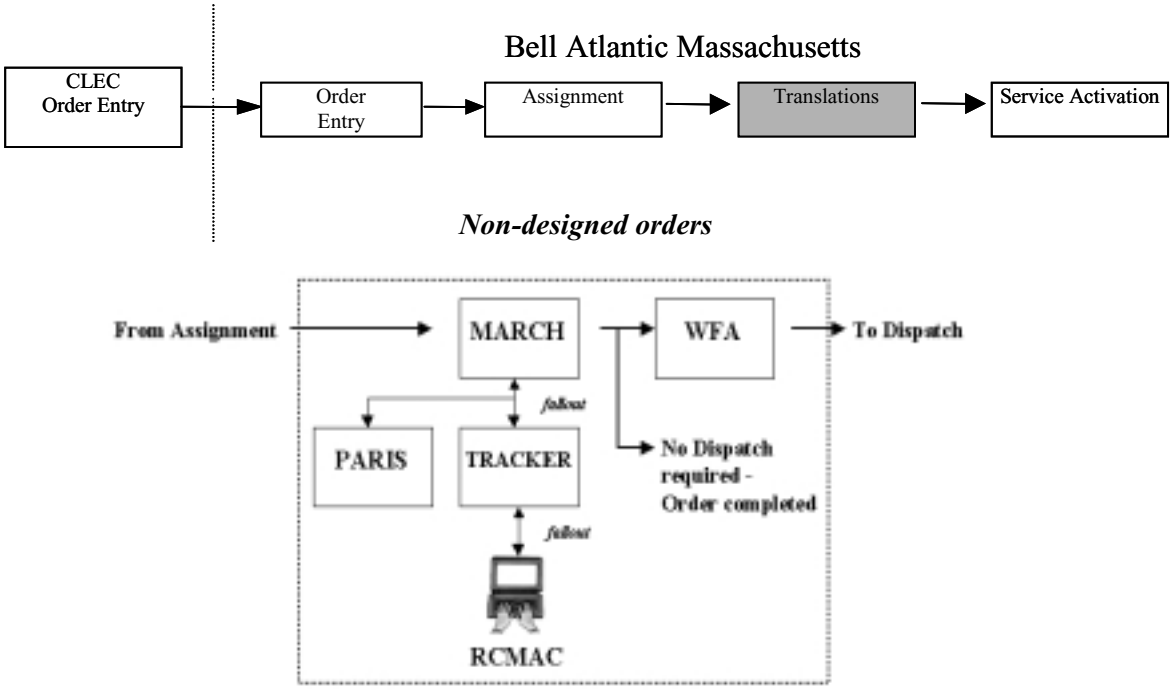
Non-designed orders

For non-designed orders such as Plain Old Telephone Service (POTS) and Basic Rate ISDN (BRI), the next stage in the provisioning process is switch translations, by the Recent Change Memory Administration Center (RCMAC).

Designed orders

For designed orders, the Circuit Provisioning Center (CPC) is involved. The CPC is responsible for resolving any SOAC to TIRKS errors, ensuring that work flows appropriately and that mechanized routines are running correctly. A CPC Toll Assignor (TA) designs the layout of the circuit, assigns the various components into TIRKS, and distributes the TIRKS WORD Document (document that identifies how the circuit is designed). All work processed by the CPC is prioritized by RID (Record Issue Date), the date the order is passed to WFA. CPC refers service order writing errors to the TISOC.

2.1.3 Provisioning Process – Translation

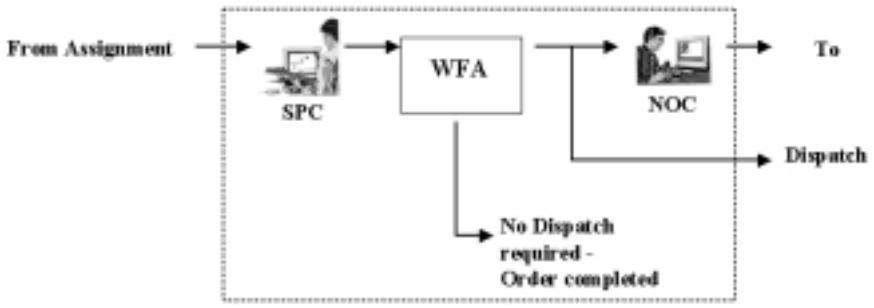


The diagram above depicts the non-designed Translations process.

Once an order is written into SOP and is assigned facilities, it will flow to Memory Administration Recent Change History (MARCH) for automated translations. According to BA-MA, approximately 90% of UNE orders, including new lines and hot-cuts flow through to the switch without any manual intervention from the RCMAC. Hot-cuts are orders involving the migration of a BA-MA Retail customer to a CLEC account with the service provisioned using a Bell Atlantic UNE Loop. All RMAs simultaneously travel in two paths: one to PARIS and the other to TRACKER. PARIS is a background system that will attempt to fix simple translations errors and sends the result of each attempt to TRACKER. If PARIS is successful in fixing an error, TRACKER will send the order forward to Dispatch. If PARIS isn't able to fix the error, TRACKER distributes the RMA to the RCMAC.

The RCMAC performs line translations (activation of switch features) for wholesale and retail non-complex/non-designed orders including Digital Subscriber Lines (DSL). Once the translations are completed, the order is released to Dispatch for completion on the date due. For hot-cuts, the RCMAC is contacted by the RCCC (Regional CLEC Coordination Center) to process the disconnection of the BA-MA retail service along with the Local Number Portability (LNP) order. Local Number Portability allows the CLEC customer to retain their original BA-MA telephone number.

Designed orders

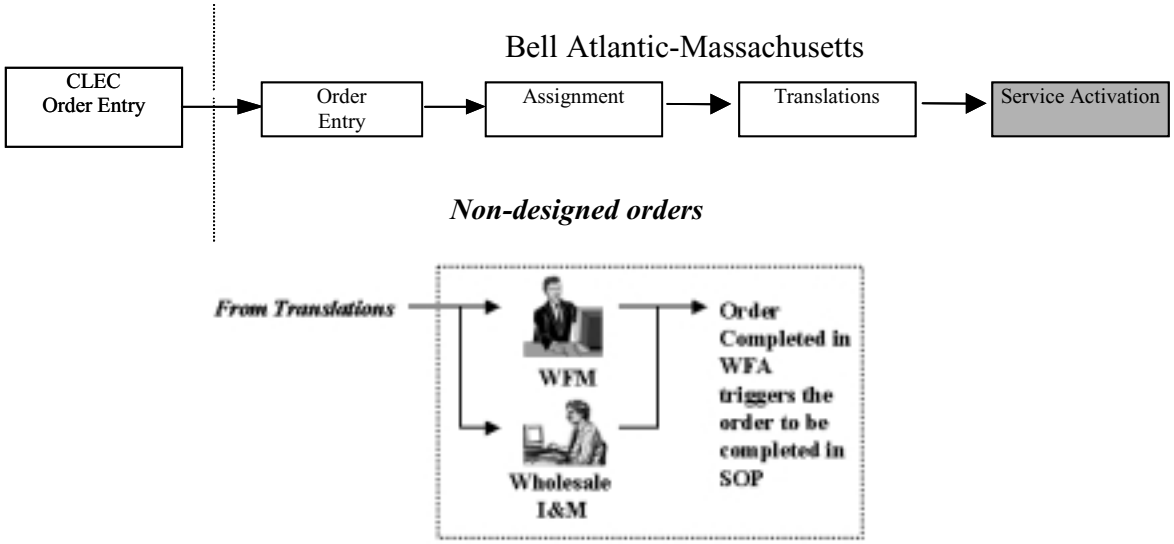


The diagram above depicts the designed order Translations process.

Once facilities are assigned for designed services the Software Provisioning Center (SPC) is responsible for creating translations. The SPC will then program switches for Direct Inward Dialing (DID), Centrex Plus, FlexPath, and ISDN (PRI) services. In addition, the SPC is involved in the translations for switch equipment when it is first installed. The SPC is ultimately responsible for ensuring that calls are routed and customers are billed correctly.

The SPC creates the translations using either MTS (for Lucent 5ESS switches) or PCCODES (for Northern Telecom DMS switches), depending on the switch technology. The SPC will create a Work Force Administration/Dispatch In (WFA/DI) ticket and use this to inform the Network Operations Center (NOC). The NOC is responsible for loading and activating switch translations for FlexPath, Primary Rate ISDN (PRI), DID, and LightSpan products. In addition, the NOC will dispatch a Central Office Technician (COT) to complete physical work within a central office when necessary.

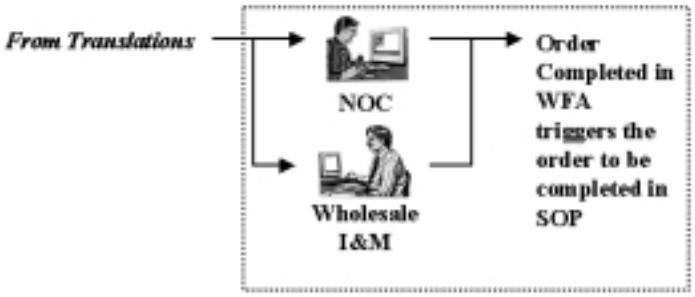
2.1.4 Provisioning Process – Dispatch / Service Activation



The diagram above depicts the non-designed order Dispatch and Service Activation process.

For non-designed orders, the Workforce Management Group (WFM) provides installation for retail and wholesale services. The WFM has the functional role of dispatching Splice Service Technicians (SST) to perform work in the field (outside of the central office). The WFM receives the order via Work Force Administration/Dispatch Out (WFA/DO). The WFM views and updates the permanent records of orders in Work Force Administration/Control (WFA/C) as appropriate. A permanent log of activities is maintained in the WFA/C OSSLOG screen. When SSTs complete the work, they will call the WFM dispatch manager to close the WFA/DO order and log this event into WFA/C OSSLOG. This will in turn trigger the order to be completed in SOP.

Designed orders

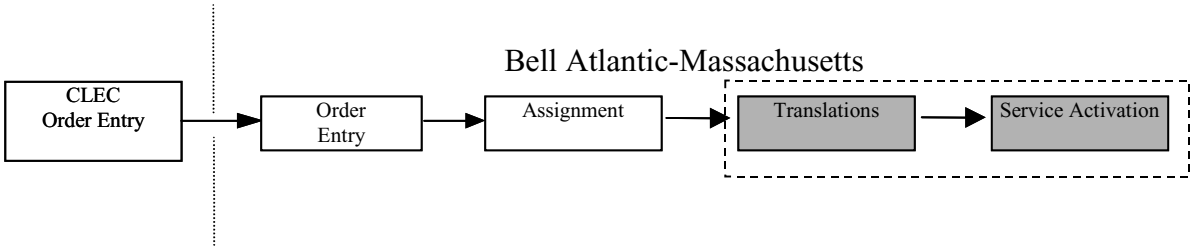


The diagram above depicts the designed order Dispatch and Service Activation process.

Service activation for wholesale designed orders and for certain non-designed orders (IDLC, DSL) is handled by the Wholesale Installation and Maintenance (I&M) group. The Wholesale I&M group is responsible for dispatching and completing the outside plant work required to complete the order. The Wholesale I&M Dispatch Manager receives the order through WFA/DO and "loads" (assigns) the order for the SST to perform the work. The SST will complete the field work and call the Dispatch Manager to close the order in WFA/DO. This closure in WFA/DO triggers the order to be completed in SOP.

Service activation for certain retail customers is handled by the Enterprise Dispatch Organization. This organization is comprised of dispatch managers and field technicians responsible for retail Bell Atlantic customers generating greater than $60,000 of revenue per year. Dispatch Managers will monitor various provisioning and maintenance buckets in WFA/DO and dispatch SSTs to perform outside plant work to complete orders. The SST will complete the work in WFA/DO and in most cases, will close the order by utilizing a hand held terminal. This will also trigger the order to be closed in SOP. Technicians communicate with other Bell Atlantic groups on toll free numbers using the customer line or portable telephone handset (butt set) or from the nearest coin telephone. In areas where service is not available, mobile phones are made available to technicians.

2.1.5 RCCC Coordination



For services (primarily UNE loops) where a hot cut is required to transfer the service from Bell Atlantic - MA to the CLEC without an extended interruption to the consumer, the translation and service activation steps will normally occur as one coordinated process. With these orders, the RCMAC does not do the translation work until the RCCC makes the request.

Certain orders require coordinated provisioning activities such as hot-cuts. The RCCC is the BA-MA point of contact for coordination. Once a wholesale order is in "Work Step," which is defined as an order that has been written in SOP and has facilities assigned to it, the RCCC acts as the Overall Control Organization (OCO). There are four major groups within the RCCC: Hot-Cuts, New Line Provisioning, Specials and LNP.

The RCCC in Boston has two manager groups, one responsible for Hot-Cuts, and one responsible for new line provisioning. The RCCC processes two wire analog loops, customer specified signaling loops, and basic rate ISDN. The RCCC will follow each order until and shortly after service activation to ensure wholesale orders are provisioned. This may involve coordination with the TISOC, since the RCCC does not possess write capabilities into SOP.

The RCCC LNP group is responsible for monitoring Number Portability Administration Center (NPAC) messages (activation and confirmation) and resolving any discrepancies by working directly with CLECs. The RCCC Specials Center in New York is responsible for the coordination of any high capacity wholesale orders, specifically DS1 and unbundled DS3.

For certain BA-MA customers, the MCSC (Major Customer Service Center), LBSC (Large Business Service Center), and the GBSC (General Business Service Center) are responsible for segments of retail customers. The groups are responsible for customers generating an annual revenue greater than one million dollars, greater than $60,000 and general business customers, respectively. All three serve the retail equivalent role of both the TISOC and the RCCC.

2.2 Scenarios

Scenarios are not applicable to this test.

2.3 Test Targets & Measures

The test target for POP6 was the BA-MA Provisioning Process. Processes, sub-processes, evaluation measures, and associated test cross-reference numbers are summarized in the following table. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in Section 3.1 "Results & Analysis."

Table 6-1: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
	Provisioning Process Parity:		
Provisioning	Evaluate Order entry process (BA-MA internal)	Consistency and repeatability as compared to Retail	POP-6-1-10, POP-6-2-10, POP-6-3-10
Provisioning	Evaluate workflow management	Consistency and repeatability as compared to Retail	POP-6-1-6, POP-6-2-6, POP-6-3-6, POP-6-4-1 through 10, POP-6-5-1 through 4
Provisioning	Evaluate workforce management	Consistency and repeatability as compared to Retail	POP-6-1-5, POP-6-1-9, POP-6-1-11, POP-6-2-5, POP-6-2-9, POP-6-2-11, POP-6-3-5, POP-6-3-9, POP-6-3-11
Provisioning	Evaluate service activation process	Consistency and repeatability as compared to Retail	POP-6-1-5, POP-6-1-7, POP-6-1-8, POP-6-1-12, POP-6-2-5, POP-6-2-7, POP-6-2-8, POP-6-2-12, POP-6-3-5, POP-6-3-7, POP-6-3-8, POP-6-3-12
Provisioning	Evaluate service design process	Consistency and repeatability as compared to Retail	POP-6-1-1, POP-6-2-1, POP-6-3-1
Provisioning	Evaluate assignment process	Consistency and repeatability as compared to Retail	POP-6-1-2 through 4, POP-6-2-2 through 4, POP-6-3-2 through 4

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table 6-2: Data Sources for Provisioning Process Parity Evaluation

Document	File Name	Location in Work Papers	Source
CPC Organization Chart	CPC_OrgChart.doc	POP-6-A-1	BA-MA
FMC Organization Chart	FMC_OrgChart.doc	POP-6-A-2	BA-MA

Document	File Name	Location in Work Papers	Source
FMC DSL Cheat Sheet, used for rules on how things work	XDSL Matrix.xls	POP-6-A-3	BA-MA
GBSC / LBSC DSL Methods and Procedures	DSL MP.doc	POP-6-A-4	BA-MA
LBSC Organization Chart	LBSC_OrgChart.xls	POP-6-A-5	BA-MA
NOC Miscellaneous Job Aids and Information Letter	Hard Copy	POP-6-A-6	BA-MA
MLAC Organization Chart	MLAC_OrgChart.doc	POP-6-A-7	BA-MA
NAC Organization Chart	NAC_OrgChart.ppt	POP-6-A-8	BA-MA
NAC OPERA Form	OPERA Form I.doc; OPERA Form II.doc	POP-6-A-9	BA-MA
NAC LNP M&P	LNP MP.doc	POP-6-A-10	BA-MA
NOC Organization Chart	NOC_OrgChart.doc	POP-6-A-11	BA-MA
NOC WFA/C Job Aid	Jawfac.doc	POP-6-A-12	BA-MA
NOC WFA/DI Job Aid	Jawafadi.doc	POP-6-A-13	BA-MA
NOC TIRKS Job Aid	Tirks.doc	POP-6-A-14	BA-MA
NOC priority number and pricing guide	Hard Copy	POP-6-A-15	BA-MA
RCCC Organization Chart	RCCC_OrgChart.xls; RCCC-NL_OrgChart.xls	POP-6-A-16	BA-MA
RCCC Job Aid – CSS Loop Provisioning / North (TXNU Circuits) – New Lines and Hot-Cuts	Hard Copy	POP-6-A-17	BA-MA

Document	File Name	Location in Work Papers	Source
RCCC SOA Job Aid – Special Services (Loop Qualification Process for Unbundled Digital Loops; Unbundled Non-Designed Digital Loops – 18-30KFT; Unbundled Digital Designed Loop with ISDN Electronics (DYVU) – North Only; Unbundled 1/0 MUX North Only)	Hard Copy	POP-6-A-18	BA-MA
RCCC Job Aid – EEL	Hard Copy	POP-6-A-19	BA-MA
RCCC IDLC Process Hot Cuts with LNP	Hard Copy	POP-6-A-20	BA-MA
RCCC UNE Hot Cut	Hard Copy	POP-6-A-21	BA-MA
RCCC Simplified Hot Cut Flow Chart (IDLC with Alternative Facilities Available November 11, 1999)	Hard Copy	POP-6-A-22	BA-MA
RCCC Local Number Portability Guide	Hard Copy	POP-6-A-23	BA-MA
RCCC 2 Wire Analog Loop – New Line Installation for TXNU	Hard Copy	POP-6-A-24	BA-MA
RCCC Unbundled 2 Wire Premium Link Loop Service (TXSU Circuits)	Hard Copy	POP-6-A-25	BA-MA
RCCC ADSL / HDSL Methods and Procedures	Hard Copy	POP-6-A-26	BA-MA

Document	File Name	Location in Work Papers	Source
RCCC MA Volumes for IDLC orders in December	Hard Copy	POP-6-A-27	BA-MA
RCCC COT Hot Cut Checklist	Hard Copy	POP-6-A-28	BA-MA
RCCC Bell Atlantic Hot Cut Results MA (October 1999 - through January 2000)	Hard Copy	POP-6-A-29	BA-MA
RCCC Coordinated Hot Cut Scorecard for NY - October 1999 through January 2000	Hard Copy	POP-6-A-30	BA-MA
RCCC Samples of Completed Hot Cut Checklists – 20 samples	Hard Copy	POP-6-A-31	BA-MA
RCCC Specials Center – CLEC Provisioning M&Ps (North – DS1 Loop; Unbundled DS1 Transport – North; Unbundled DS3 Transport – North)	Hard Copy	POP-6-A-32	BA-MA
RCCC Specials Center – performance measure concerning order processing and met or missed date dues	Hard Copy	POP-6-A-33	BA-MA
RCCC LNP Center Organization Chart	RCCC-LNP_OrgChart.xls	POP-6-A-34	BA-MA
RCCC LNP Center - M&P	Hard Copy	POP-6-A-35	BA-MA
RCCC LNP Center – LNP Pooling timeline for donating and accepting numbers from the pool for MA	Hard Copy	POP-6-A-36	BA-MA
RCMAC Organization Chart	RCMAC_OrgChart.xls	POP-6-A-37	BA-MA

Document	File Name	Location in Work Papers	Source
RCMAC – RCCC Hotline Calls – 2nd page on eligible inquires details the reasons why the RCCC would call the dedicated hotline to the RCMAC	UNEHOTNE.doc	POP-6-A-38	BA-MA
RCMAC – LNP M&P	LNP M&P.doc, LNP MP_RCMAC Support.doc	POP-6-A-39	BA-MA
RCMAC – UNE M&P	Neunb.doc	POP-6-A-40	BA-MA
RCMAC Staff – 11 page document detailing what they do	Rcstaffresp.doc	POP-6-A-41	BA-MA
RCMAC Hot-Cut Check Off List	Check.doc	POP-6-A-42	BA-MA
SPC Organization Chart	SPC_OrgChart.doc	POP-6-A-43	BA-MA
WFM Organization Chart	WFM-NE_OrgChart.xls; WFM-NO_OrgChart.xls	POP-6-A-44	BA-MA
Wholesale I&M Organization Chart	Wholesale I&M_OrgChart.doc	POP-6-A-45	BA-MA
Massachusetts CPC Interview Summary	MA CPC Interview Summary Final.doc	POP-6-A-46	BA-MA
Massachusetts Enterprise Dispatch Organization Interview Summary	MA EDO Interview Summary Final.doc	POP-6-A-47	BA-MA
Massachusetts FMC Interview Summary	MA FMC Interview Summary Final.doc	POP-6-A-48	BA-MA
Massachusetts LBSC/GBSC Interview Summary	MA LBSC & GBSC Interview Summary Final.doc	POP-6-A-49	BA-MA
Massachusetts MCSC Interview Summary	MA MCSC Interview Summary Final.doc	POP-6-A-50	BA-MA

Document	File Name	Location in Work Papers	Source
Massachusetts MLAC Interview Summary	MA MLAC Interview Summary Final.doc	POP-6-A-51	BA-MA
Massachusetts NAC Interview Summary	MA NAC Interview Summary Final.doc	POP-6-A-52	BA-MA
Massachusetts NOC Interview Summary	MA NOC Interview Summary Final.doc	POP-6-A-53	BA-MA
Massachusetts RCCC Interview Summary	MA RCCC Interview Summary Final.doc	POP-6-A-54	BA-MA
Massachusetts RCCC LNP Center Interview Summary	MA RCCC LNP Interview Summary Final.doc	POP-6-A-55	BA-MA
Massachusetts RCCC Specials Interview Summary	MA RCCC Specials Interview Summary Final.doc	POP-6-A-56	BA-MA
Massachusetts RCMAC Interview Summary	MA RCMAC Interview Summary Final.doc	POP-6-A-57	BA-MA
Massachusetts SPC Interview Summary	MA SPC Interview Summary Final.doc	POP-6-A-58	BA-MA
Massachusetts WFM Interview Summary	MA WFM Interview Summary Final.doc	POP-6-A-59	BA-MA
Massachusetts Wholesale I&M Interview Summary	MA Wholesale I&M Interview Summary Final.doc	POP-6-A-60	BA-MA
Massachusetts Frame Interview Summary	Hard Copy	POP-6-A-61	BA-MA
Frame M&Ps for hot cuts, migrations and UNE hot cut checklist	Hard Copy	POP-6-A-62	BA-MA
TISOC Interview Summary	Hard Copy	POP-6-A-63	BA-MA
Massachusetts NAC Lotus notes versus fax production report	Hard Copy	POP-6-A-64	BA-MA

2.4.1 Data Generation

This test did not rely on data generation or volume testing.

2.5 Evaluation Methods

The Provisioning Process Parity Evaluation was conducted through a series of visits to BA-MA centers and facilities involved in the provisioning process. Directors, managers, and front-line employees were interviewed to provide an understanding of the functions within each center.

An operational analysis technique was used to evaluate BA-MA's systems, interfaces and processes for parity with their corresponding retail functions. It consisted of targeted interviews of various BA-MA personnel, along with structured reviews of processes, systems, and documentation. In addition, KPMG Consulting observed various work queues in BA-MA centers.

Three dimensions of parity within the provisioning processes were addressed by this test:

- Parity in the Systems;
- Parity in the Methods and Procedures documentation; and
- Parity in the process execution within the work centers.

The evaluation measures used in this test were defined as follows:

- *Consistent* – free from variation or contradiction;
- *Repeatable* – ability to present again in the same terms or form; and
- *Comparable* – to represent as similar.

Interviews, walkthrough tours, and observations were made in the following BA-MA provisioning centers and facilities:

- CPC (Circuit Provisioning Center)
- EDO (Enterprise Dispatch Organization)*
- FMC (Facility Maintenance Center)
- GBSC (General Business Service Center)*
- LBSC (Large Business Service Center)*
- MLAC (Mechanized Loop Assignment Center)
- NAC (Network Administration Center)
- NOC (Network Operations Center)
- RCCC (Regional CLEC Coordination Center)
- RCCC LNP Center (Regional CLEC Coordination Center for Local Number Portability)
- RCCC Specials (Regional CLEC Coordination Center for Special Services)
- RCMAC (Recent Change Memory Administration Center) [75]

[75] Although the RCMAC is responsible for the provisioning, maintenance and repair, and help desk functions, POP6 observations and interviews focused on the provisioning of Central Office Equipment (OEs), specific features and dial tone.

- SPC (Software Provisioning Center)
- TISOC (Telecommunications Industry Service Operations Center)
- WFM (Work Flow Management)
- Wholesale I&M Center (Installation and Maintenance)
- Central Offices

*Denotes centers that process retail, not wholesale, orders, but that were considered in order to determine overall parity in order processing.

2.6 Analysis Methods

The Provisioning Process Parity Evaluation (POP6) included a checklist of evaluation criteria developed by the test manager during the initial phase of the Bell Atlantic-Massachusetts OSS Evaluation. These evaluation criteria, detailed in the *Master Test Plan*, provided the framework of norms, standards, and guidelines for the Provisioning Process Parity Evaluation.

The data collected were analyzed employing the evaluation criteria referenced above.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below.

Table 6-3: POP6 Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
	Methods and Procedures:		
POP-6-1-1	The CPC's methods and procedures are consistent, repeatable and comparable between wholesale and retail.	Satisfied	Methods and procedures in the CPC are consistent, repeatable and comparable between wholesale and retail. All work is prioritized by RID and all work processes are identical for retail and wholesale.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-6-1-2	The FMC's methods and procedures are consistent, repeatable and comparable between wholesale and retail.	Satisfied	Methods and procedures in the FMC are consistent, repeatable and comparable between wholesale and retail. Wholesale and retail share the same escalation telephone number and process flow designed to provide a 24 hour turn around. There are no special priorities for retail or wholesale.
POP-6-1-3	The MLAC's methods and procedures are consistent, repeatable and comparable between wholesale and retail.	Satisfied	Methods and procedures in the MLAC are consistent, repeatable and comparable between wholesale and retail. The MLAC does not differentiate between retail and wholesale, all work is prioritized by date due.
POP-6-1-4	The NAC's methods and procedures are consistent, repeatable and comparable between wholesale and retail.	Satisfied	Methods and procedures in the NAC are consistent, repeatable and comparable between wholesale and retail. Work is prioritized by date due without regard to the type of service (retail/wholesale). The processing of RMAs is identical between wholesale and retail. AAs' do not look for customer differentiation and only when an order is investigated (except for unique services with limited availability such as UNE) do they know if it is wholesale or retail.
POP-6-1-5	The NOC's methods and procedures are consistent, repeatable and comparable between wholesale and retail.	Satisfied	Methods and procedures in the NOC are consistent, repeatable and comparable between wholesale and retail. Orders are assigned to employees by Wire Center. Work is prioritized by date due and WOT (wire and testing date) and distributed to employees based on employee skills (specialties in areas of technology), not by customer.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-6-1-6	The RCCC's methods and procedures are consistent, repeatable and comparable between wholesale and retail.	Satisfied	The overall methods and procedures for order coordination by the RCCC are consistent, repeatable and comparable between wholesale and retail. They are comparable to the following retail centers in regards to order coordination; MCSC, GBSC, and LBSC. The RCCC coordinates orders for CLEC (wholesale) customers. The Retail centers (MCSC, GBSC, and LBSC) negotiate and coordinate for retail customers.
POP-6-1-7	The RCMAC's methods and procedures are consistent, repeatable and comparable between wholesale and retail.	Satisfied	Methods and procedures in the RCMAC are consistent, repeatable and comparable between wholesale and retail. Manual translation work is prioritized by date due and tasks and assigned based on geography. Both retail and wholesale orders are processed in the same manner with the customer type transparent to the technicians unless they investigate an order.
POP-6-1-8	The SPC's methods and procedures are consistent, repeatable and comparable between wholesale and retail.	Satisfied	Methods and procedures in the SPC are consistent, repeatable and comparable between wholesale and retail. Although work comes in through Lotus Notes and FAX, all work is prioritized by date due without regard to customer type.
POP-6-1-9	The Wholesale I&M's methods and procedures are consistent, repeatable and comparable between wholesale and retail.	Satisfied	Overall Wholesale I&M methods and procedures are consistent, repeatable and comparable between wholesale and retail. They are comparable to the retail centers; MCSC, GBSC, and LBSC in regards to process and system flows and priority with the exception that the MCSC, GBSC and LBSC also perform the coordination function that in wholesale is found in the RCCC.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-6-1-10	The TISOC's methods and procedures are consistent, repeatable and comparable between wholesale and retail.	Satisfied	The overall methods and procedures for order entry used by the TISOC are consistent, repeatable and comparable between wholesale and retail. They are comparable to the retail centers; MCSC, GBSC, and LBSC in regards to order entry. Order Entry and Coordination roles are performed in separate wholesale organizations; the TISOC and RCCC respectively. These roles are performed in one organization for retail customers, either the MCSC, GBSC, or LBSC. Analysis showed there were no inconsistencies in service between wholesale and retail.
POP-6-1-11	The WFM's methods and procedures are consistent, repeatable and comparable between wholesale and retail.	Satisfied	The WFM's Methods and procedures are consistent, repeatable and comparable between wholesale and retail. Prioritization is based on next commitment time, not on customer types.
POP-6-1-12	The Central Office's methods and procedures are consistent, repeatable and comparable between wholesale and retail.	Satisfied	Central Office methods and procedures are consistent, repeatable and comparable between wholesale and retail. All work is received via the WFA-DI and Switch/FOMS systems and machine prioritized by the system based on order commitments. Central Office personnel cannot differentiate wholesale orders from retail unless they investigate. The exception is hot-cuts which are only performed for wholesale customers.
	Work Volumes Process:		
POP-6-2-1	Work volumes in the CPC are executed in a consistent and repeatable manner and are comparable between wholesale and retail.	Satisfied	All work executed by the CPC is prioritized by RID and the processes are the same for both retail and wholesale orders.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-6-2-2	Work volumes in the FMC are executed in a consistent and repeatable manner and are comparable between wholesale and retail.	Satisfied	All work executed by the FMC is prioritized by date due. Facility Assignors are geographically based and processes are the same for both retail and wholesale orders.
POP-6-2-3	Work volumes in the MLAC are executed in a consistent and repeatable manner and are comparable between wholesale and retail.	Satisfied	All work executed by the MLAC is prioritized by date due. Facility Assignors are responsible for both retail and wholesale orders. Processes for both retail and wholesale orders are the same. Although the MLAC is located in the same building as the LBSC and GBSC, there is no special treatment afforded to these retail groups.
POP-6-2-4	Work volumes in the NAC are executed in a consistent and repeatable manner and are comparable between wholesale and retail.	Satisfied	Retail orders are received through Lotus Notes, while wholesale orders are received through a fax. A one month review of NAC results where 315 fax orders and 1,838 Lotus Notes orders were processed, consistently shows that this difference does not impact the execution of the RMA.
POP-6-2-5	Work volumes in the NOC are executed in a consistent and repeatable manner and are comparable between wholesale and retail.	Satisfied	The execution of orders in the NOC is consistent and comparable between wholesale and retail. The loading of switch translations and activation is based on technology by geography for COT dispatch.
POP-6-2-6	Work volumes in the RCCC are executed in a consistent and repeatable manner and are comparable between wholesale and retail.	Satisfied	The RCCC is primarily responsible for hot cut coordination and there is no direct retail comparison. However, RCCC work is executed in a consistent and repeatable manner. Looking at results for Oct 99 through Jan 00, the RCCC averaged 320 regular hot cuts per month with an average on time rate of 98.1%. IDLC hot cuts averaged 36 per month with an average on time completion rate of 96.6%. Overall, there were 1,427 hot cuts completed with a 98% on time rate.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-6-2-7	Work volumes in the RCMAC are executed in a consistent and repeatable manner and are comparable between wholesale and retail.	Satisfied	Although Translations Administrators are geographically segregated, the execution of orders by the RCMAC is the same for both retail and wholesale and is based on the date due of orders.
POP-6-2-8	Work volumes in the SPC are executed in a consistent and repeatable manner and are comparable between wholesale and retail.	Satisfied	The execution of orders by Translations Managers in the SPC is prioritized by date due. All Translations Managers process both retail and wholesale orders in the same manner.
POP-6-2-9	Work volumes in the Wholesale I&M are executed in a consistent and repeatable manner and are comparable between wholesale and retail.	Satisfied	Work Volumes in the Wholesale I&M are executed in a consistent, comparable and repeatable manner between wholesale and retail with work prioritized by date due. KPMG Consulting found that 24% of wholesale technicians as compared to 85% of retail technicians used mobile phones to communicate with other Bell Atlantic offices. Based on the work center communication practice supplied by BA-MA, work completions are not impacted by the percentage of mobile phones available to wholesale technicians. The technicians first choice is to contact work centers on toll free numbers using the customer's line, if the customer's line is not available as a second choice, they use a butt set in a terminal. As a third choice the technician will use the nearest coin phone. The mobile phones are used for remote areas such as cell sites where no service is available.
POP-6-2-10	Work volumes in the TISOC are executed in a consistent and repeatable manner and are comparable between wholesale and retail.	Satisfied	The TISOC only processes CLEC orders. When comparing the TISOC to its retail counterparts (GBSC, LBSC, and MCSC), work volumes are executed in a consistent and repeatable manner and are comparable between wholesale and retail.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-6-2-11	Work volumes in the WFM are executed in a consistent and repeatable manner and are comparable between wholesale and retail.	Satisfied	Work volumes in the WFM are executed in a consistent and repeatable manner and comparable, between wholesale and retail. The following points were considered by KPMG Consulting, but were determined not to affect the overall provisioning of an order. The WFM can directly contact a retail customer on jeopardy (JEP) orders, but is required to work through the RCCC or TISOC for wholesale JEP orders. WFM can renegotiate directly with retail customers but must go through the RCCC/TISOC for wholesale. The RCCC/TISOC has direct contact telephone numbers for the CLEC, enabling efficient communications between BA-MA and the CLEC.
POP-6-2-12	In the Central Office work is executed in a consistent and repeatable manner and is repeatable between wholesale and retail.	Satisfied	Central Office work is executed consistently and comparatively between wholesale and retail. The Central Office technician receives work via WFA-DI and Switch/FOMS systems. All work is processed in the same manner and, without investigation, the technician does not know if an order is wholesale or retail.
	Systems:		
POP-6-3-1	Systems are utilized by the CPC in a consistent and comparable manner between wholesale and retail orders.	Satisfied	The CPC utilizes the same systems regardless of wholesale or retail origin and jobs are prioritized by RID for both wholesale and retail.
POP-6-3-2	Systems are utilized by the FMC in a consistent and comparable manner between wholesale and retail orders.	Satisfied	The FMC utilizes the same systems regardless of wholesale or retail origin.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-6-3-3	Systems are utilized by the MLAC in a consistent and comparable manner between wholesale and retail orders.	Satisfied	The MLAC utilizes the same systems regardless of wholesale or retail origin.
POP-6-3-4	Systems are utilized by the NAC in a consistent and comparable manner between wholesale and retail orders.	Satisfied	The NAC utilizes the same systems regardless of wholesale or retail origin with the exception of the mode of order receipt. Wholesale work is received via fax while the majority of retail work is received via Lotus Notes. This difference in the mode of receipt did not impact the work flow. Based on a one month review of NAC results where 315 fax orders and 1,838 Lotus Notes orders were processed consistently, this difference did not impact the execution of the RMA.
POP-6-3-5	Systems are utilized by the NOC in a consistent and comparable manner between wholesale and retail orders.	Satisfied	The NOC utilizes the same systems regardless of wholesale or retail origin. Different systems are utilized based on technology, but this does not differentiate between wholesale and retail orders.
POP-6-3-6	Systems are utilized by the RCCC in a consistent and comparable manner between wholesale and retail orders.	Satisfied	Systems utilized by the RCCC are consistent and comparable between retail and wholesale order processing.
POP-6-3-7	Systems are utilized by the RCMAC in a consistent and comparable manner between wholesale and retail orders.	Satisfied	The RCMAC utilizes the same systems regardless of wholesale or retail origin. They utilize different systems based on technology, but this does not differentiate between wholesale and retail orders.
POP-6-3-8	Systems are utilized by the SPC in a consistent and comparable manner between wholesale and retail orders.	Satisfied	The SPC utilizes the same systems regardless of wholesale or retail origin. They utilize different systems based on the technology involved, but this does not differentiate between wholesale and retail orders.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-6-3-9	Systems are utilized by the Wholesale I&M in a consistent and comparable manner between wholesale and retail orders.	Satisfied	The WFA system utilized by wholesale I&M does not differentiate between retail and wholesale orders when processing or distributing work.
POP-6-3-10	Systems are utilized by the TISOC in a consistent and comparable manner between wholesale and retail orders.	Satisfied	Systems utilized by the TISOC are solely for CLEC order processing. When comparing the TISOC to its retail counterparts (GBSC, LBSC, and MCSC), systems are utilized by the TISOC in a consistent and comparable manner between wholesale and retail orders.
POP-6-3-11	Systems are utilized by the WFM in a consistent and comparable manner between wholesale and retail orders.	Satisfied	WFM mainly utilizes WFA/C and WFA/DO to process orders. Both retail and wholesale orders are processed consistently and comparably within these systems. The WFA system does have a priority / weighting / "pricing" schema that is utilized to distribute work, but this does not differentiate between retail and wholesale orders. It is based on the complexity of the order itself regardless of its origin.
POP-6-3-12	Systems are utilized by the Central Office in a consistent and comparable manner between wholesale and retail orders.	Satisfied	Systems used by the Central Office are consistent and comparable between wholesale and retail orders. Work is distributed to the technicians through WFA-DI and Switch/FOMS and all orders are prioritized without differentiation between wholesale and retail.
	Work Volumes–Systems:		
POP-6-4-1	Work volumes within the FIRST system are consistently administered between retail and wholesale.	Satisfied	FIRST attempts to fix simple errors and for those that can't be fixed, FIRST passes them on for manual handling. When attempting to remedy simple assignment errors, FIRST does not differentiate based upon wholesale or retail origin.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-6-4-2	Work volumes within the LFACS system are consistently administered between retail and wholesale.	Satisfied	LFACS records, house outside plant facility records. These records are administered and processed consistently between retail and wholesale origin.
POP-6-4-3	Work volumes within the LMOS system are consistently administered between retail and wholesale.	Satisfied	LMOS is primarily used for wholesale and retail maintenance ticket tracking. Occasionally, the provisioning process necessitates that records are viewed in LMOS for verification. LMOS is a maintenance system that is used for reference and not for service order activity, however, it is used for reference on existing accounts. In this regard, work volumes are not administered or processed within the LMOS system differently between retail and wholesale orders.
POP-6-4-4	Work volumes within the MARCH system are consistently administered between retail and wholesale.	Satisfied	MARCH processes automated translations and if manual work is required (RMA), March distributes it to TRACKER and PARIS. The MARCH system does not differentiate between wholesale and retail orders.
POP-6-4-5	Work volumes within the PARIS and TRACKER systems are consistently administered between retail and wholesale.	Satisfied	PARIS and TRACKER process and distribute work based on geography and do not differentiate between wholesale and retail orders.
POP-6-4-6	Work volumes within the PAWS system are consistently administered between retail and wholesale.	Satisfied	PAWS work distribution does not differentiate between wholesale and retail orders. PAWS distributes work volumes consistently between retail and wholesale origin based on the type of error to the MLAC, FMC, or NAC.
POP-6-4-7	Work volumes within the SOP system are consistently administered between retail and wholesale.	Satisfied	SOP does not differentiate between wholesale and retail orders with the exception of some specific USOCs related to wholesale products.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-6-4-8	Work volumes within the SWITCH system are consistently administered between retail and wholesale.	Satisfied	SWITCH does not differentiate based upon wholesale or retail origin. Work volumes are consistently administered between retail and wholesale.
POP-6-4-9	Work volumes within the TIRKS system are consistently administered between retail and wholesale.	Satisfied	TIRKS does not differentiate based upon wholesale or retail origin.
POP-6-4-10	Work volumes within the WFA system are consistently administered between retail and wholesale.	Satisfied	WFA work volumes within the WFA/C, WFA/DI and the WFA/DO systems do not differentiate based upon wholesale or retail origin.
	Order Processing and Distribution:		
POP-6-5-1	Order processing and distribution from and within the MARCH system is consistent between retail and wholesale.	Satisfied	MARCH processes and distributes orders based upon due date and due time for both retail and wholesale.
POP-6-5-2	Order processing and distribution from and within the SOAC system is consistent between retail and wholesale.	Satisfied	Orders are processed and distributed by the SOAC system consistently between retail and wholesale orders.
POP-6-5-3	Order processing and distribution from and within the SOP system is consistent between retail and wholesale.	Satisfied	SOP does not have separate ordering and distribution interfaces differentiating between wholesale and retail.
POP-6-5-4	Order processing and distribution from and within the TIRKS system is consistent between retail and wholesale.	Satisfied	For designed orders, TIRKS processes and distributes WORD DOCS based upon RID (Record Issue Date) date regardless whether the order is of retail or wholesale origin.

G. Test Results: Provisioning Coordination Process Evaluation (POP7)

1.0 Description

The POP7 Provisioning Coordination Process Evaluation is a review of the procedures, processes, and operational environment used to support coordinated provisioning with CLECs.

The evaluation addressed products and situations that require coordinated provisioning to minimize customer disruption. The requirement for coordination may come from either BA-MA policy or a CLEC request.

A three part operational analysis approach was used to evaluate BA-MA's Provisioning Processes. The first approach consisted of targeted interviews of BA-MA development personnel along with structured reviews of process documentation facilitated by an evaluation checklist. A second approach leveraged the KPMG Consulting transactions as a vehicle to test BA-MA's provisioning accuracy and timeliness. In an effort to increase the blindness" of the test and minimize test bias, the team adopted a third approach of soliciting "live" CLEC orders as a means of assessing BA-MA's provisioning coordination capabilities.

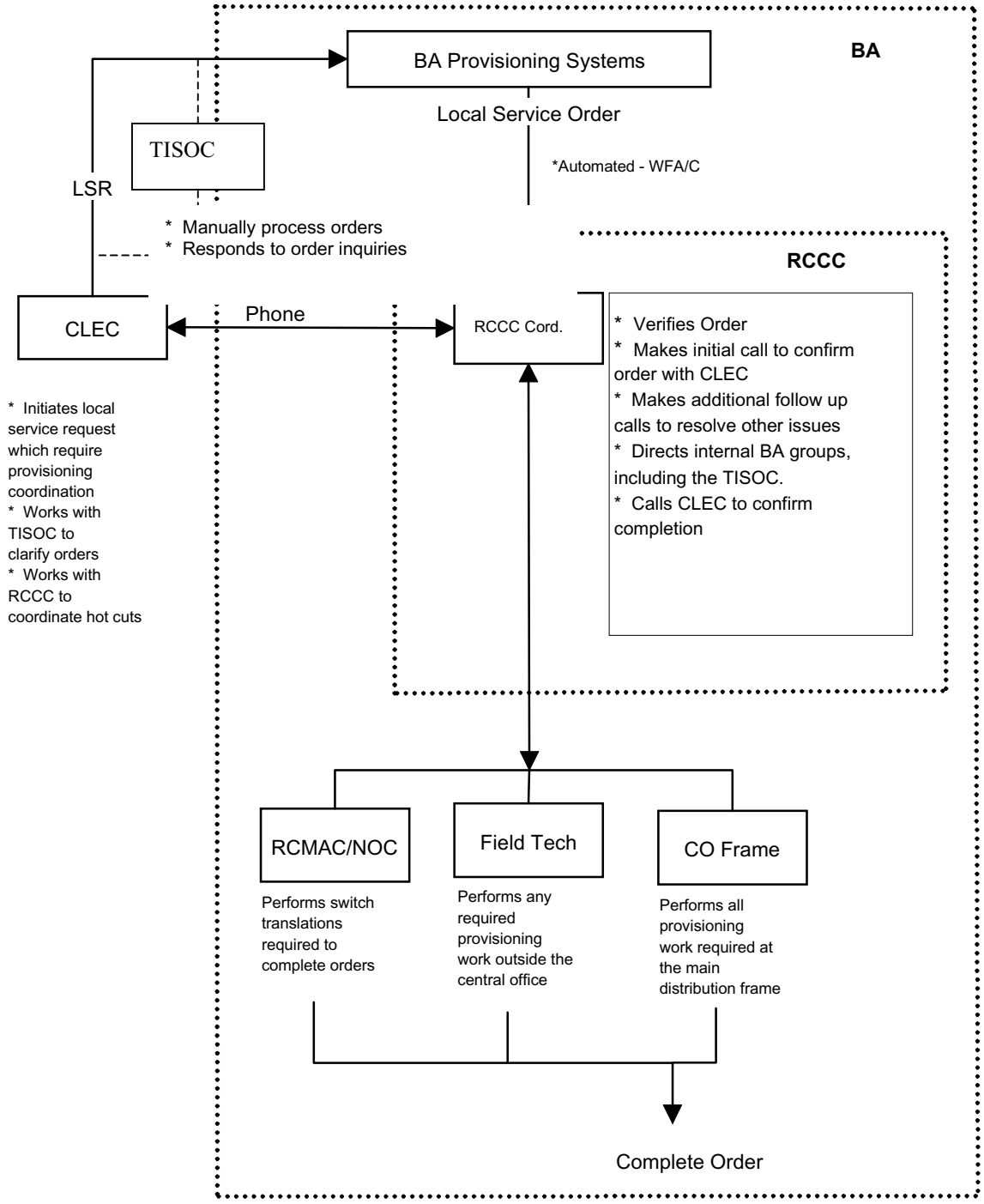
In addition, standard-provisioning activities associated with orders submitted as part of POP 1 and POP 2 are reported in this test.

2.0 Methodology

This section summarizes the test methodology.

2.1 Process Description

The Bell Atlantic provisioning coordination process flow is depicted in the following chart:



The Bell Atlantic Regional CLEC Coordination Center (RCCC) Hot-Cut group in Boston is the focal point for coordinated provisioning. More specifically, it is the coordination center for all provisioning activity involving plain old telephone service (POTS), special service circuits including those transported over integrated digital carrier (IDLC) for unbundled service products, and Local Number Portability (LNP). Once a wholesale order is in "Work Step" in the Workforce Administration (WFA) system, defined as an order that has been written in Service Order Processor (SOP) and has facilities assigned to it, the Regional CLEC Coordination Center (RCCC) acts as the Overall Control Organization (OCO).

The coordinated provisioning process begins when the RCCC receives a local service order through BA-MA's provisioning systems. A coordinator in the RCCC verifies the order and places an initial call to the CLEC to confirm order information such as due date, type of service order, and number of lines involved. Additional calls are placed to the CLEC for some orders prior to actual provisioning depending on the importance of coordinating the exact timing of service installation. The RCCC LNP group is responsible for monitoring Number Portability Administration Center (NPAC), messages, which include activates, broadcasts and confirmations and resolving any discrepancies by working directly with CLECs.

During actual provisioning, the RCCC directs the relevant BA-MA provisioning organizations, including technician teams in the central office or field, and switch translation personnel in the Recent Change Memory Administration Center (RCMAC) through the process. Customarily, the RCMAC is contacted by the RCCC to release the order and disconnect the service along with the LNP order.

The Wholesale Installation and Maintenance (I&M) group is responsible for dispatching and completing the outside plant work required to complete the order. The Wholesale I&M Dispatch Manager will receive the order through Work Force Administration/Dispatch Out (WFA/DO) and "load" the Outside Plant Technician to perform the work. Following provisioning, the RCCC will place another phone call to the CLEC to confirm completion of the ordered service installation.

2.2 Scenarios

The following scenarios were used as part of POP7:

Table 7-1: POP7 Coordinated and Standard Provisioning Scenarios

Scenario Detailed Description
Migrate a BA-MA 1-line residential customer to CLEC UNE loop via LNP. Listing changes from non-list to straight-line listing.
Migrate a retail 1-line residential customer to CLEC UNE loop via LNP. Submit a directory listing (DL) to change from a non-list to a straight-line listing. Error introduction: Request a 2-day interval. Supplement (SUPP) to correct error.

Scenario Detailed Description
Migrate a BA-MA 1-line business customer to CLEC UNE loop via LNP. Submit DL to change from non-list to straight-line listing.
Migrate a CLEC UNE-P 1-line residential customer to UNE Loop with LNP. Customer has listing, which should not change during the conversion.
Migrate 1-line business, retail customer to UNE-Loop, no LNP, with DL
Migrate 1-line business, retail customer to UNE-Loop, no LNP, no DL
Migrate 1-line residential, retail customer to UNE-Loop, no LNP, with DL+L21
Migrate 1-line residential, retail customer to UNE-Loop, no LNP, no DL
Install new services for Resale, UNE-P and UNE-loop delivery methods with DL
Migrate BA-MA DS0 to UNE-loop, no LNP
Resale and UNE-P service requests for ISDN/BRI, POTS and Centrex , requiring switch translations
Install DSI inter-office facilities

* *Scenarios provisioned with LNP required the CLEC switch to establish dial tone. Scenarios provisioned without LNP required a Bell Atlantic switch to establish dial tone for simulated KPMG Consulting transactions.*

2.3 Test Targets & Measures

The test target was Bell Atlantic's provisioning coordination process that involves the migration of circuits from Bell Atlantic to CLECs. Processes, sub-processes, evaluation measures, and associated test cross-reference numbers are summarized in the following table. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in Section 3.1 "Results & Analysis."

Table 7-2: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Support Provisioning Coordination Process	Identify orders requiring coordination	Availability of methods and procedures Completeness and consistency of processes	POP-7-1-1, POP 7-1-2, POP 7-1-2-A, POP 7-1-2-B, POP 7-1-2-C, POP 7-1-2-D, POP 7-1-2-E, POP 7-2-3, POP 7-2-4

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
Support Provisioning Coordination Process	Request coordination of order	Completeness and consistency of processes	POP 7-2-1, POP 7-2-2
Support Provisioning Coordination Process	Receive notification of provisioning schedule	Completeness and consistency of processes Timeliness of notification	POP 7-1-3, POP 7-1-3-A, POP 7-1-3-B, POP 7-1-3-C, POP 7-1-3-D, POP 7-1-3-E, POP 7-2-5, POP 7-2-6, POP 7-2-7
Support Provisioning Coordination Process	Manage coordinated provisioning cases	Completeness and consistency of operating management practice Controllability, efficiency reliability of process Completeness of process improvement practices	POP 7-5-1, POP 7-5-2, POP 7-5-3, POP 7-5-4, POP 7-5-5, POP 7-3-1, POP 7-3-2, POP 7-3-3, POP 7-4-1, POP 7-4-2, POP 7-4-3, POP 7-4-4, POP 7-4-5, POP 7-4-6

2.4 Data Sources

The data collected for the test are summarized in the table below:

Table 7-3: Data Sources for Provisioning Coordination Process Evaluation

Document	File Name	Location in Work Papers	Source
RCCC Organization Chart	RCCC_OrgChart.xls; RCCC-NL_OrgChart.xls	POP-6-A-16	BA-MA
RCCC Job Aid – CSS Loop Provisioning / North (TXNU Circuits) – New Lines and Hot-Cuts	Hard Copy	POP-6-A-17	BA-MA

Document	File Name	Location in Work Papers	Source
RCCC SOA Job Aid – Special Services (Loop Qualification Process for Unbundled Digital Loops; Unbundled Non-Designed Digital Loops – 18-30KFT; Unbundled Digital Designed Loop with ISDN Electronics (DYVU) – North Only; Unbundled 1/0 MUX North Only)	Hard Copy	POP-6-A-18	BA-MA
RCCC IDLC Process Hot Cuts with LNP	Hard Copy	POP-6-A-20	BA-MA
RCCC UNE Hot Cut	Hard Copy	POP-6-A-21	BA-MA
RCCC Simplified Hot Cut Flow Chart (IDLC with Alternative Facilities Available 11/3/99)	Hard Copy	POP-6-A-22	BA-MA
RCCC Local Number Portability Guide	Hard Copy	POP-6-A-23	BA-MA
RCCC Unbundled 2 Wire Premium Link Loop Service (TXSU Circuits)	Hard Copy	POP-6-A-25	BA-MA
RCCC ADSL / HDSL Methods and Procedures	Hard Copy	POP-6-A-26	BA-MA
RCCC MA Volumes for IDLC orders in December	Hard Copy	POP-6-A-27	BA-MA
RCCC COT Hot Cut Checklist	Hard Copy	POP-6-A-28	BA-MA
RCCC Bell Atlantic Hot Cut Results MA (10/99 – 1/00)	Hard Copy	POP-6-A-29	BA-MA

Document	File Name	Location in Work Papers	Source
RCCC Coordinated Hot Cut Scorecard for NY – October 1999 through January 2000	Hard Copy	POP-6-A-30	BA-MA
RCCC Samples of Completed Hot Cut Checklists – 20 samples	Hard Copy	POP-6-A-31	BA-MA
RCCC Specials Center – performance measure concerning order processing and met or missed date dues	Hard Copy	POP-6-A-33	BA-MA
RCCC LNP Center Organization Chart	RCCC-LNP_OrgChart.xls	POP-6-A-34	BA-MA
RCCC LNP Center – "Homemade" M&P	Hard Copy	POP-6-A-35	BA-MA
RCCC LNP Center – LNP Pooling timeline for donating and accepting numbers from the pool for MA	Hard Copy	POP-6-A-36	BA-MA
RCMAC Organization Chart	RCMAC_OrgChart.xls	POP-6-A-37	BA-MA
RCMAC – RCCC Hotline Calls – 2nd page on eligible inquires details the reasons why the RCCC would call the dedicated hotline to the RCMAC	UNEHOTNE.doc	POP-6-A-38	BA-MA
RCMAC – LNP M&P	LNP M&P.doc, LNP MP_RCMAC Support.doc	POP-6-A-39	BA-MA
RCMAC – UNE M&P	Neunb.doc	POP-6-A-40	BA-MA

Document	File Name	Location in Work Papers	Source
RCMAC Staff – 11 page document detailing what they do. – 1st page will suffice	Rcstaffresp.doc	POP-6-A-41	BA-MA
RCMAC Hot-Cut Check Off List	Check.doc	POP-6-A-42	BA-MA
Wholesale I&M Organization Chart	Wholesale I&M_OrgChart.doc	POP-6-A-45	BA-MA
Massachusetts RCCC Interview Summary	MA RCCC Interview Summary Final.doc	POP-6-A-54	BA-MA
Massachusetts RCCC LNP Center Interview Summary	MA RCCC LNP Interview Summary Final.doc	POP-6-A-55	BA-MA
Massachusetts RCCC Specials Interview Summary	MA RCCC Specials Interview Summary Final.doc	POP-6-A-56	BA-MA
Massachusetts RCMAC Interview Summary	MA RCMAC Interview Summary Final.doc	POP-6-A-57	BA-MA
Massachusetts Wholesale I&M Interview Summary	MA Wholesale I&M Interview Summary Final.doc	POP-6-A-60	BA-MA
Massachusetts Frame Interview Summary	Paper Copies Only	POP-6-A-61	BA-MA
Frame methods for hot cuts, migrations and the frame UNE hot cut Checklist	Paper Copies Only	POP-6-A-62	BA-MA
TISOC Interview Summary	Hard Copy	POP-6-A-63	BA-MA
Massachusetts NAC Lotus Notes versus fax production report	Hard Copy	POP-6-A-64	BA-MA
Unbundled 2 wire loop IM field support (1999-00358-OSP)	Hard Copy	POP-6-A-65	BA-MA

Document	File Name	Location in Work Papers	Source
Unbundled Analog Conversion from IDLC (1999-00221-MDP).	Hard Copy	POP-6-A-66	BA-MA
Two Wire Analog Loop Hot Cut Including LNP and IDLC – Regional (RCO-99-1014)	Hard Copy	POP-6-A-67	BA-MA
SWITCH/FOMS & Frame Method F9812-01, Job Aid for UNE Migration and Checklist	Hard Copy	POP-6-A-68	BA-MA
NOC Method NOCIL 9908-026-C, Unbundled Network Element (UNE) Conversion/Hot Cut Training and Certification Process (Bell Atlantic-North only)	Hard Copy	POP-6-A-69	BA-MA
RCCC Method RCO-99-1060, ADSL/HDSL 2 wire Unbundled Digital ADSL Loop and 2 or 4 wire HDSL Loop	Hard Copy	POP-6-A-70	BA-MA
CSC Method 1999-00626-MDP, Held for Cable Procedure	Hard Copy	POP-6-A-71	BA-MA
RCCC Method RCO-99-1079, Performance Guide for Hot Cuts	Hard Copy	POP-6-A-72	BA-MA
NOC method NOCIL 9807-18, Unbundled Network Elements	Hard Copy	POP-6-A-73	BA-MA
RCCC - South Coordinator's Guide, DS1 Unbundled Loop Service	Hard Copy	POP-6-A-74	BA-MA

Document	File Name	Location in Work Papers	Source
TR 72575, Issue 2, UNE Digital Specifications	Hard Copy	POP-6-A-75	BA-MA
NOC Method NOCIL 9908-026-A, UNE Conversion/Hot Cut Training & Certification Process (Bell Atlantic-North only)	Hard Copy	POP-6-A-76	BA-MA

2.4.1 Data Generation/Volumes

This test did not rely on data generation or volume testing.

2.5 Evaluation Methods

The procedural steps applied in testing the provisioning coordination process consisted of the following:

1. Targeted interviews of BA-MA personnel in the TISOC, including the center manager, a first-level manager, and a service representative to review:
   - UNE-Loop Hot-Cut, and LNP order processing; and
   - Hand-off between the TISOC and the RCCC.
2. Targeted interviews with the RCCC center manager, process owners, and coordinators to review:
   - Work assignment and provisioning coordination procedures with the CLECs, RCMAC, and Central Office (CO); and
   - The center's policy and process to measure, track, and maintain the coordination procedure and improvements.
3. Targeted interviews with first-level managers and technicians at various Bell Atlantic C.O.s to review work assignment and the RCCC coordination procedures with the CO for performing cross connects and Hot-Cuts.
4. Targeted interviews with first-level managers and specialists in the RCMAC to review the work assignment process and the RCCC coordination procedures with the RCMAC for performing switch translations.
5. A review of the Bell Atlantic provisioning coordination documentation for the applicable products.

6. Review of KPMG Consulting coordinated test cases and BA-MA's performance in provisioning them.

7. Observations of BA-MA personnel performing coordinated provisioning activities at all of the aforementioned centers.

8. Analysis of switch translations, Provisioning Completion Notices (PCNs), Local Service Confirmations (LSCs), and listings from the Directory Listings (DL) database to verify provisioning of transactions submitted as part of the POP1 test.

2.6 Analysis Methods

The Provisioning Coordination Process Evaluation included a checklist of evaluation criteria developed by the test manager during the initial phase of the Bell Atlantic-Massachusetts OSS Evaluation. These evaluation criteria, detailed in the *Master Test Plan*, provided the framework of norms, standards, and guidelines for the Provisioning Coordination Process Evaluation.

The data collected were analyzed employing the evaluation criteria referenced above.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

This table summarizes the evaluation criteria, the associated test cross-reference, the test result and supporting comments.

Table 7-4: POP7 Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
	Procedural Consistency:		
POP-7-1-1	A complete (e.g., beginning-to-end) description of the coordination process is defined.	Satisfied	A complete description of this process can be found in Bell Atlantic's: "2 Wire Analog Loop HOT CUT Including LNP and IDLC – Regional, Document #: RCO-99-1014."
POP-7-1-2	The coordinated provisioning procedures are practiced in the field reliably.	Satisfied	Coordinated provisioning procedures for "Hot-Cuts", IDLC, ADSL, DS0, and DS1 installations are practiced in the field as indicated in POP-7-1-2-A – POP-7-1-2-E.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-7-1-2-A	Hot cut coordination provisioning procedures are conducted in adherence with methodologies prescribed in Method and Procedure documentation.	Satisfied	Bell Atlantic was evaluated on their adherence to tasks identified in "2 Wire Analog Loop HOT CUT Including LNP and IDLC – Regional, Document #: RCO-99-1014." KPMG Consulting observed eighty-one loop migrations (Hot-Cut) tests with a total of seven hundred and ninety-three tasks. KPMG Consulting measured BA-MA's ability to adhere to tasks defined in their Methods and Procedures documentation. Seven hundred and eighty-five tasks (99%) were provisioned in accordance to BA-MA's Methods and Procedures.
POP-7-1-2-B	IDLC coordination provisioning procedures are conducted in adherence with methodologies prescribed in Method and Procedure documentation.	Satisfied	Bell Atlantic was evaluated on their adherence to tasks identified in "2 Wire Analog Loop HOT CUT Including LNP and IDLC – Regional, Document #: RCO-99-1014." KPMG Consulting observed twenty-two loop migrations (IDLC) tests with a total of two hundred eleven tasks. KPMG Consulting measured BA-MA's ability to adhere to tasks defined in their Methods and Procedures documentation. Two hundred ten tasks (99%) were provisioned in accordance to BA-MA's Methods and Procedures.
POP-7-1-2-C	ADSL coordination provisioning procedures are conducted in adherence with methodologies prescribed in Method and Procedure documentation.	Satisfied	Bell Atlantic was evaluated on their adherence to tasks identified in "BA-MA ADSL Method and Procedures, "1999-00320-OSP." KPMG Consulting observed forty-five ADSL tests with a total of three hundred and thirty-three tasks. KPMG Consulting measured BA-MA's ability to adhere to tasks defined in their Methods and Procedures documentation. Three hundred and thirty-one tasks (99%) were provisioned in accordance to BA-MA's Methods and Procedures.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-7-1-2-D	DS0 coordination provisioning procedures are conducted in adherence with methodologies prescribed in Method and Procedure documentation.	Satisfied	Bell Atlantic was evaluated on their adherence to tasks identified in "Unbundled Digital Loop Technical Specifications, TR72575, RCCC Coordinators Guide for Unbundled Loop Service, RCO-98-0026, Unbundled Network Elements, NOCIL 9807-18." KPMG Consulting observed thirty-four (DS0) tests with a total of sixty-eight tasks. KPMG Consulting measured BA-MA's ability to adhere to tasks defined in their Methods and Procedures documentation. Sixty-eight tasks (100%) were provisioned in accordance to BA-MA's Methods and Procedures.
POP-7-1-2-E	DS1 coordination provisioning procedures are conducted in adherence with methodologies prescribed in Method and Procedure documentation.	Satisfied	Bell Atlantic was evaluated on their adherence to tasks identified in "Unbundled Digital Loop Technical Specifications, TR72575, RCCC Coordinators Guide for Unbundled Loop Service, RCO-98-0026, Unbundled Network Elements, NOCIL 9807-18." KPMG Consulting observed twenty (DS1) tests with a total of eighty tasks. KPMG Consulting measured BA-MA's ability to adhere to tasks defined in their Methods and Procedures documentation. Seventy-four tasks (88%) were provisioned in accordance to BA-MA's Methods and Procedures.
POP-7-1-3-A	Hot cut coordinated provisioning procedures are conducted in accordance with stated timing intervals.	Satisfied	KPMG Consulting observed eighty-one loop migrations (Hot Cut) tests with a total of eighty-seven lines. KPMG Consulting measured BA-MA's ability to meet provisioning frame due times. Eighty-one migrations (100%) were provisioned at the agreed upon frame due time.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-7-1-3-B	IDLC coordinated provisioning procedures are conducted in accordance with stated timing intervals.	Satisfied	KPMG Consulting observed twenty-two loop migrations (IDLC) tests with a total of twenty-two lines. KPMG Consulting measured BA-MA's ability to meet provisioning frame due times. Twenty-one migrations (95%) were provisioned at the agreed upon frame due time.
POP-7-1-3-C	ADSL coordinated provisioning procedures are conducted in accordance with stated timing intervals.	Satisfied	KPMG Consulting observed forty-five ADSL tests. KPMG Consulting measured BA-MA's ability to meet provisioning installation due dates. Forty-one ADSL installations (91%) were provisioned at the agreed upon installation due dates.
POP-7-1-3-D	DS0 coordinated provisioning procedures are conducted in accordance with stated timing intervals.	Satisfied	KPMG Consulting observed thirty-four DS0 tests. KPMG Consulting measured BA-MA's ability to meet provisioning installation due dates. Thirty-four DSOs (100%) were provisioned at the agreed upon installation due dates.
POP-7-1-3-E	DS1 coordinated provisioning procedures are conducted in accordance with stated timing intervals.	Satisfied	KPMG Consulting observed twenty DS1 tests. KPMG Consulting measured BA-MA's ability to meet provisioning installation due dates. Eighteen DS1s (90%) were provisioned at the agreed upon installation due dates.
	Process Scope:		
POP-7-2-1	The process includes procedures to request coordination.	Satisfied	Bell Atlantic uses the internal document "2 Wire Analog Loop HOT CUT Including LNP and IDLC – Regional, Document #: RCO-99-1014" to detail the procedures for requesting coordination. Pages 54-55, Calling the CLEC, highlight the process that should be followed for the following CLEC contacts: ♦ CTR1 (date the order is received at the RCC technician/coordinator position) ♦ CTR2 (date due minus two) ♦ DD (due date of the conversion)

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-7-2-2	Coordination request procedures are consistent and complete.	Satisfied	Bell Atlantic adheres to the same procedures for all CLEC coordination requests. Refer to document "2 Wire Analog Loop HOT CUT Including LNP and IDLC – Regional, Document #: RCO-99-1014", for detail procedures. Pages 54-55 - Calling the CLEC, highlight the steps in the coordination process: ♦ CTR1 (date the order is received at the RCC technician/coordinator position, ♦ CTR2 (date due minus two), ♦ DD (due date of the conversion) All required steps are detailed with contingency steps to follow if necessary. These procedures are consistently used with all CLECs.
POP-7-2-3	The process includes procedures to identify orders requiring coordination.	Satisfied	RCCC orders to be coordinated carry a Frame Due Time (FDT) and Complete Related Order (CRO) Field Identifier (FID) to group them. The CRO entry drives the orders to a "held" status in the MARCH system. This will prevent the orders from being worked by the RCMAC without coordination. The RCCC reviews all CRO orders to schedule and coordinate the work.
POP-7-2-4	Identification procedures are consistent and complete.	Satisfied	Procedures are consistent and complete. The RCCC is primarily in control of order identification and the CRO FID is consistent in its use as an identification key.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-7-2-5	The process includes procedures for notification of provisioning schedule.	Satisfied	The RCCC Job Aid "CSS Loop Provisioning/ North (TXNU Circuits) – New Lines and Hot-Cuts" requires the coordinator to contact the CLEC on CTR1 (date the order is received in WFA-C). On CTR1, the coordinator will (normally but not required) complete a checklist (grid) used to schedule/track activity for all hot cut activity. In addition to verifying type of service ordered, number of lines, facilities to be used etc. the coordinator will contact the CLEC to verify the hot cut date and time scheduled. The coordinator from CTR1 to completion is responsible to control scheduling dispatches, and the actual hot cut. It is highly manual but well defined.
POP-7-2-6	Schedule notification procedures are consistent, complete and timely.	Satisfied	The coordination procedures are consistent and complete across the involved organizations. These were found in the RCCC, RCMAC and Frame procedures/Job Aids. The RCCC has the lead role and must manually notify the frame and RCMAC to complete the service order.
	Performance Measurement and Reporting:		
POP-7-3-1	Performance measures are defined and controllable.	Satisfied	The RCCC has developed a score card (RCCC Coordinated Hot Cut Scorecard) report that tracks the performance of hot cuts with and without IDLC. Daily and cumulative results are reported.
POP-7-3-2	Responsibilities for tracking and maintaining measures are defined.	Satisfied	Responsibility for measurement tracking is assigned to a metric team in the RCCC with specific individuals responsible for specific geographical areas.
POP-7-3-3	Process improvement practices are defined and responsibilities are defined.	Satisfied	A complete description of this process with defined responsibilities can be found in Bell Atlantic's: "Performance Guideline for Hot Cuts, Document # RCO-99-1079."

Test Cross-Reference	Evaluation Criteria	Result	Comments
	Coordination Management Specific Scope:		
POP-7-4-1	RCCC manual coordination procedures with the CLECs are defined and consistent.	Satisfied	The coordination procedures are consistent and complete across the involved organizations. The RCCC has the lead role and must manually notify the frame and RCMAC to complete the CLEC order. This is supported by RCCC, RCMAC and Frame procedures/Job Aids in "Unbundled Network Elements, NOCIL 9807-18."
POP-7-4-2	Procedures for addressing errors and exceptions are defined.	Satisfied	Bell Atlantic identifies procedures for addressing errors and exceptions in the document "2 Wire Analog Loop HOT CUT Including LNP and IDLC – Regional, Document #: RCO-99-1014". On pages 30-31 procedures detail the remedial action required when either Bell Atlantic or the CLEC misses the order on the requested date due. Exceptions are addressed throughout this document as well. For example, page 27 details procedures for reusing loops combined with IDLC. Subsequent pages offer procedures for dealing with 100% integrated SLC and migrating integrated to Litespan. In each instance, Bell Atlantic offers special procedural changes to address these non-standard types of migrations.
POP-7-4-3	Procedures for escalations are defined.	Satisfied	The TISOC and RCCC are the customer interface groups for all escalations. In these centers, processes allow the agents to escalate up through the Vice President level as required.
POP-7-4-4	The processes for errors, exceptions, and escalations are documented, published, and maintained.	Satisfied	Methods are documented and distributed which help identify exceptions or errors, which the coordinator will manage to resolution. The TISOC or RCCC (customer interfacing groups) only receives escalations and both have processes that allow the agents to escalate up through the organization to Vice President level as required.

Test Cross-Reference	Evaluation Criteria	Result	Comments
	Procedural Consistency Standard:		
POP-7-5-1	Directory Listings database is consistent with required field inputs from submitted LSRs.	Satisfied	Two hundred and thirty-six Directory Listings were reviewed to determine if BA-MA provisioned the listings correctly. KPMG Consulting measured provisioning accuracy and timeliness. Two hundred thirty-one listings (98%) were provisioned correctly.
POP-7-5-2	Switch Translation is consistent with required field inputs from submitted LSRs.	Satisfied	Two hundred and fifty-eight Switch Translations were reviewed to determine if BA-MA provisioned the listings correctly. KPMG Consulting measured provisioning accuracy and timeliness. Two hundred fifty-four translations (98%) were provisioned correctly.
POP-7-5-3	Disconnected Orders were provisioned with the proper intercept recordings and blank number intercept recordings.	Satisfied	A series of orders were submitted via EDI or GUI to request working Telephone lines be disconnected with a intercept recording or blank number intercept recordings (transfer of call options). KPMG Consulting measured provisioning accuracy and timeliness. Thirty-two orders were submitted as part of this verification test. All thirty-two orders (100%) were provisioned with the appropriate intercept recording.
POP-7-5-4	The provisioning completion notices, completion dates accurately reflect the local service completion due date.	Satisfied	Five hundred and thirty-eight Provisioning Completion Notices (PCNs) were reviewed to determine if the completion date was consistent with the LSC due date. KPMG Consulting measured provisioning accuracy and timeliness. Five hundred thirteen PCNs (95%) were provisioned in conformance with the requested due date.

H. Test Results: Capacity Management Evaluation (POP8)

1.0 Description

The pre-order, order, and provisioning (POP) systems capacity management evaluation entailed a detailed review of the procedures, systems, tools and management processes in place to plan for and to manage projected growth in the use of Direct Carrier Access System (DCAS), the graphical user interface (GUI), and electronic data interchange (EDI) interfaces for wholesale pre-order, order, and provisioning.

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

2.1.1 Ordering

Ordering transactions arrive at Bell Atlantic through a number of channels. Most Competitive Local Exchange Carriers (CLECs), including all of the large ones, transmit Local Service Requests (LSRs) through an automated interface in EDI format. Some CLECs use Bell Atlantic's Web GUI for interactive entry of LSRs.

It is important to note that during the course of this evaluation, Bell Atlantic implemented important new systems to handle the acceptance of ordering transactions and the return of notifiers (acknowledgements [ACKs], confirmations and completions). The business process description and evaluation herein will be based on this end-state configuration of the Bell Atlantic systems.

2.1.1.1 EDI

LSRs in EDI format are transmitted by the CLECs to Bell Atlantic via File Transfer Protocol (FTP), Network Data Mover (NDM), and Secure Socket Layer 3 (SSL3) protocols. Bell Atlantic has deployed a system called NetLink to receive these transmissions. NetLink is responsible for performing the following steps on inbound LSRs:

- Store the received file in the local file system.
- Decrypt the file and store the clear-text version in the local file system.
- Split the EDI file into multiple new files with only one order per file in EDI format and store the new files in the file system.
- Translate the EDI formatted order into Electronic Interface Format (EIF), a tag-value pair type of format.
- Submit the EIF-format file to DCAS.

NetLink is responsible for the following process for outbound notifiers:

- Receive notifier from DCAS as EIF format file and store in the local file system.
- Translate the EIF file to EDI format and store in the local file system.
- Encrypt the EDI formatted file and store in the local file system.
- Transmit the encrypted EDI notifier to the CLEC.

2.1.1.2 Web GUI

The Web GUI is also used to enter orders. It is typically used by smaller CLECs. This system allows a CLEC to interactively enter orders. Once complete, the order is forwarded to DCAS.

The Web GUI also provides an interface for viewing the status of orders.

2.1.2 Pre-Order

2.1.2.1 EDI

Bell Atlantic accepts pre-order queries as EDI messages through the EDI pre-order application. Most are forwarded to DCAS for processing. Address validation requests are sent to Request Manager.

2.1.2.2 Web GUI

CLECs can enter pre-order queries through the Web GUI system. Most transactions are forwarded to DCAS for processing. Address validation requests are sent to Request Manager.

2.1.3 Provisioning

Provisioning activities result in notifications returned to the CLECs. These notifications typically emanate from the BA-MA provisioning systems and are forwarded to DCAS. DCAS generates notification messages back through the interface which the originating pre-order requests or orders came through, and back to the CLEC.

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test target was the order processing systems capacity management process. Processes, sub-processes, evaluation measures, and associated test cross-reference numbers are summarized in the following table. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in Section 3.1 "Results & Analysis."

Table 8-1: Test Target Cross-Reference

Process	Sub-Process	Evaluation Measure	Test Cross-Reference
DCAS/GUI/EDI Interface Capacity Management	Data collection and reporting	Data collection and reporting of business volumes, resource utilization, and performance monitoring	POP-8-1-1, POP-8-1-2, POP-8-1-3, POP-8-1-4, POP-8-1-5, POP-8-1-6
DCAS/GUI/EDI Interface Capacity Management	Data verification and analysis	Data verification and analysis of business volumes, resource utilization, and performance monitoring	POP-8-1-7, POP-8-1-8, POP-8-1-9, POP-8-1-10
DCAS/GUI/EDI Interface Capacity Management	Systems planning	Systems and capacity planning	POP-8-1-11, POP-8-1-12, POP-8-1-13, POP-8-1-14, POP-8-1-15

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table 8-2: Data Sources for Order Processing Systems Capacity Management Evaluation

Document	File Name	Location in Work Papers	Source
Sentinel/EnView: Response time and Availability Monitoring	enviewinfo.ppt	POP-8-A-I-1	BA-MA
Sample DCN&DR Design Review Pre-Development Phase Document	assetqst.doc	POP-8-A-I-2	BA-MA
ISO 9002 Certificate of Approval from Bureau Veritas Quality International (NA) Certificate # 41624	Hard Copy	POP-8-A-I-3	BA-MA

Document	File Name	Location in Work Papers	Source
ISO9001 non-conformity clearance report	Hard Copy	POP-8-A-I-4	BA-MA
Architecture for Firewall-1 Implementation	Hard Copy	POP-8-A-I-5	BA-MA
INS Baseline Firewall Architecture, Project Description	Hard Copy	POP-8-A-I-6	BA-MA
INS Firewall Links	Hard Copy	POP-8-A-I-7	BA-MA
Firewall Baseline Implementation Standards	Hard Copy	POP-8-A-I-8	BA-MA
Firewall - Trouble reporting Procedures	Hard Copy	POP-8-A-I-9	BA-MA
Information and Network Security Policy Exception Process	Hard Copy	POP-8-A-I-10	BA-MA
Firewall Emergency Callout List & Escalation Contacts	Hard Copy	POP-8-A-I-11	BA-MA
Application Portfolio Data, 1999 Score Card Considerations	Hard Copy	POP-8-A-I-12	BA-MA
Enterprise Communications Workflow Process	Hard Copy	POP-8-A-I-13	BA-MA
Modeled Demand Data Network Capital Requirements	Hard Copy	POP-8-A-I-14	BA-MA
Network Capacity Planning	Hard Copy	POP-8-A-I-15	BA-MA
DCNDR Role Descriptions	Hard Copy	POP-8-A-I-16	BA-MA
Utilization Report for BA-North	Hard Copy	POP-8-A-I-17	BA-MA

Document	File Name	Location in Work Papers	Source
Capacity Planning Collection & Reporting Procedures	Hard Copy	POP-8-A-I-18	BA-MA
MVS Software Installation Acceptance Guide	Hard Copy	POP-8-A-I-19	BA-MA
MVS Software Installation Implementation Guide	Hard Copy	POP-8-A-I-20	BA-MA
IGS Wholesale Architecture	Hard Copy	POP-8-A-I-21	BA-MA
Phase III Web GUI Process (includes ECXpert, EnView)	Hard Copy	POP-8-A-I-22	BA-MA
Blue Hill and Burlington Architecture	Hard Copy	POP-8-A-I-23	BA-MA
IGS Wholesale Architecture	Hard Copy	POP-8-A-I-24	BA-MA
Bell Atlantic Data Center, Network & Distributed Resources	Hard Copy	POP-8-A-I-25	BA-MA
Computer Center Environment/baseline MIPs, upgrade plan	Hard Copy	POP-8-A-I-26	BA-MA
Network & Corporate Systems DCN&DR Presentation (March 6, 2000)	Hard Copy	POP-8-A-I-27	BA-MA
BA-North CPU Utilization, Production, Business Systems	Hard Copy	POP-8-A-I-28	BA-MA
BA-North CPU Utilization, Production, Technology & Architecture	Hard Copy	POP-8-A-I-29	BA-MA

Document	File Name	Location in Work Papers	Source
BA-North DASD Utilization, Production, Business Systems	Hard Copy	POP-8-A-I-30	BA-MA
Service Improvement Planning	Hard Copy	POP-8-A-I-31	BA-MA
DCNDR Planning Organization, Mainframe Provisioning	Hard Copy	POP-8-A-I-32	BA-MA
Bell Atlantic Planner – DTIG and Network Job Description	Hard Copy	POP-8-A-I-33	BA-MA
Bell Atlantic Production Support Manager Job Description	Hard Copy	POP-8-A-I-34	BA-MA
ISO9002 Table of Contents	Hard Copy	POP-8-A-I-35	BA-MA
Change Management Implementation Standard	Hard Copy	POP-8-A-I-36	BA-MA
Bell Atlantic-North and South Capacity Used vs. Capacity Available	Hard Copy	POP-8-A-I-38	BA-MA
DCNDR Planning Organization, Application Planning	Hard Copy	POP-8-A-I-39	BA-MA
Mainframe Scorecard Operating Procedure	Hard Copy	POP-8-A-I-40	BA-MA
Mainframe Exception Application Planning Mainframe Scorecard Operating Procedure Report Operating Procedure	Hard Copy	POP-8-A-I-41	BA-MA
Out of Cycle Modeled Demand Mainframe/Midrange Capital Requirements	Hard Copy	POP-8-A-I-42	BA-MA

Document	File Name	Location in Work Papers	Source
Application Planning Processing Anomalies Investigation Guide	Hard Copy	POP-8-A-I-43	BA-MA
Design Review Policy	Hard Copy	POP-8-A-I-44	BA-MA
Service Improvement Planning Policy	Hard Copy	POP-8-A-I-45	BA-MA
DCN&DR Design Review Pre-Development Phase	Hard Copy	POP-8-A-I-46	BA-MA
Capacity Management Handbook – Methods & Procedures for Program/1 Distributed Capacity Metrics and Management	Hard Copy	POP-8-A-I-48	BA-MA
Weekly Table – System Utilization Metrics Summary Report for EDI Order Servers – Period April 9, 2000 to April 16, 2000	Hard Copy	POP-8-A-I-49	BA-MA
Bell Atlantic System Connectivity Diagram – Distributed Infrastructure – All	Hard Copy	POP-8-A-I-50	BA-MA
POP-8 Detailed Test Plan	Hard Copy	POP-8-B-II-1	KPMG Consulting
Data Center Network & Distributed Resources Meeting Summary (March 6, 2000)	BA - NY - Meeting-Summary-3-6-2000.doc	POP-8-B-II-2	KPMG Consulting
Bell Atlantic response to March 6, 2000 meeting summary	Hard Copy	POP-8-B-II-3	BA-MA

Document	File Name	Location in Work Papers	Source
Bell Atlantic PonTronic Software Demo, Meeting Notes (March 28, 2000)	Bell Atlantic PonTronic Software Demo.doc	POP-8-B-II-4	KPMG Consulting
Bell Atlantic response to PonTronic Demo notes	PontronicsDemoInterview SummaryResponse.doc	POP-8-B-II-5	BA-MA
Bell Atlantic Capacity Management Practices, Program/1 Capacity Management, Meeting Summary (April 27, 2000)	BA-CapMgmt-Meeting-Summary-4-27-2000.doc	POP-8-B-II-6	KPMG Consulting
Bell Atlantic response to April 27, 2000 meeting summary	Interview Summary Response apr27.doc	POP-8-B-II-7	BA-MA
Bell Atlantic Blue Hill Computer Center Operations Meeting Summary (April 13, 2000)	BA-PearlRiver-BHCC-Meeting-Summary-4-13-200.doc	POP-8-B-II-8	KPMG Consulting
Blue Hill Computing Center team, Interview Summary (April 13, 2000)	BHCC_Intv_041300.doc	POP-8-B-II-9	KPMG Consulting
KPMG Consulting Exit Peer Review Signoff (July 2000)	Hard Copy	POP-8-B-II-10	KPMG Consulting

2.4.1 Data Generation/Volumes

This test did not rely on data generation or volume testing.

2.5 Evaluation Methods

Interviews with the Bell Atlantic personnel responsible for the operation of the systems that comprise the wholesale front end pre-order and order processing systems were conducted. Interviews were also conducted with the personnel responsible for monitoring Bell Atlantic's internal network and data center operations. These interviews were supplemented with an analysis of the data and documentation provided by Bell Atlantic.

2.6 Analysis Methods

The Pre-Order, Order and Provisioning Systems Capacity Management Evaluation included a checklist of evaluation criteria developed by the test manager during the initial phase of the Bell Atlantic-Massachusetts OSS Evaluation. These evaluation criteria, detailed in the *Master Test Plan*, provided the framework of norms, standards, and guidelines for the Pre-Order, Order and Provisioning Systems Capacity Management Evaluation.

The data collected were analyzed employing the evaluation criteria referenced above.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below.

Table 8-3: POP8 Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-8-1-1	Processes exist for capturing business and transaction volumes.	Satisfied	Business and transaction volumes are collected. These data are reported through regulatory reporting systems that report business volumes. The PonTronic system is used to monitor orders and notifiers processed through the Netlink platform.
POP-8-1-2	Processes exist for measuring and tracking resource utilization.	Satisfied	Measures including central processing unit (CPU) utilization and memory utilization are captured through automated systems at regular intervals. For instance, UNIX computing platform CPU utilization is captured at five-minute intervals and memory utilization is at thirty-minute intervals.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-8-1-3	The performance of those elements necessary for the processing of electronic transactions are measured and tracked.	Satisfied	Resource utilization is monitored at appropriate system components/elements. BA-MA performs monitoring at the various elements that comprise the computing systems, including memory, central processor, and disk array drive space with various utilities and tools.
POP-8-1-4	Tools exist to monitor and collect resource utilization data.	Satisfied	For mid-range servers, there are a variety of utilities that are used to collect resource utilization data. For central processing unit (CPU) utilization, SAR is used. Memory utilization tools include Memtool, HP Glance Plus, VMSTAT, SVMON and vmtune.
POP-8-1-5	Performance is monitored at all applicable levels (e.g. network, database server, application server, client, etc.).	Satisfied	Network performance is monitored and reported by the Data Center Network & Distributed Resources group. Application and database servers are monitored by utilities such as SAR, Memtool, and VMSTAT. Client performance is monitored using Sentinel/EnView. Sentinel/EnView is an application that provides monitoring continuously throughout the BA-MA region.
POP-8-1-6	Instrumentation and other tools exist to monitor performance.	Satisfied	BA-MA utilizes Sentinel/EnView, to monitor the performance of the pre-order, order, and provisioning applications. For the underlying computing systems, a range of utilities such as VMSTAT and SVMON are employed to monitor their performance.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-8-1-7	A process exists for forecasting business volumes and transactions.	Satisfied	Bell Atlantic receives forecasts of future wholesale volumes from the CLECs. Additionally, Bell Atlantic works in conjunction with the CLEC community to improve the accuracy of the forecasts. Internally, BA-MA has forecasting procedures and methodologies that are executed on a regular basis. The inputs into the forecasting process include historical and current data as well as future expectations.
POP-8-1-8	Processes exist to provide the business volume tracking and forecasting data for use in capacity management planning.	Satisfied	BA-MA does track business volume tracking and forecasting data to use for capacity management. The PonTronic system allows order and notifier volumes to be monitored which may be used for analysis and consideration in the capacity management process.
POP-8-1-9	Processes exist for reviewing the performance of the business and transaction volume forecasting process.	Satisfied	The review of performance of the business and transaction volume forecasting process takes place during the yearly capital budgeting process which projects annual spending requirements on upgrades to existing systems.
POP-8-1-10	Processes exist for verification and validation of data associated with processing of transactions.	Satisfied	A process exists whereby BA-MA measures data at the server level, network level and client level. BA-MA is then able to verify and validate one set of measurements against another.
POP-8-1-11	A capacity management process is defined and documented.	Satisfied	BA-MA has internal documentation defining its capacity management process.
POP-8-1-12	The capacity management process provides for the incorporation of resource usage and capacity in its planning process.	Satisfied	BA-MA uses the internal utilization metrics it captures as the basis for its capacity management process. This includes memory and central processor utilization.

Test Cross-Reference	Evaluation Criteria	Result	Comments
POP-8-1-13	The capacity management process provides for the incorporation of performance monitoring results.	Satisfied	BA-MA uses performance monitoring data as input to its capacity management process. Historical data is archived and made available for capacity management purposes. Information captured by tools such as Sentinel/EnView are considered.
POP-8-1-14	Systems are designed in a manner that would allow them to scale to meet increases in demand.	Satisfied	The computing architecture employed by BA-MA spreads the workload of the pre-order, order, and provisioning systems across many servers. The network and deployed computing platforms are of a highly scalable nature. Furthermore, load-balancing hardware is utilized to distribute the transaction load.
POP-8-1-15	Processes exist which provide guidelines for increasing capacity, load re-balancing, or systems tuning based on fluctuations in demand.	Satisfied	BA-MA has utilization thresholds to trigger the acquisition of additional system capacity. Reporting thresholds have been established for central processor and memory utilization. If weekly reported central processor and memory utilization values for its mid-range servers are 40% or less, then the systems are considered to be functioning within a "green" or normal range. If either variable exceeds 40% but is less than 80%, then a "yellow" condition exists and triggers an analysis review and possible equipment upgrades. Values exceeding 80% generate a "red" condition and initiate an expedited review and equipment upgrade process.